পঞ্জীভুক্ত নম্বৰ - ৭৬৮ /৯৭ Registered No.-768/97

অসম ৰাজপত্ৰ

সত্যমেব জয়তে

THE ASSAM GAZETTE

অসাধাৰণ

EXTRAORDINARY

প্ৰাপ্ত কৰ্ত্তৃত্বৰ দ্বাৰা প্ৰকাশিত

PUBLISHED BY THE AUTHORITY

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No. 426 Dispur, Thursday, 12th September, 2024, 21st Bhadra, 1946 (S. E.)

GOVERNMENT OF ASSAM

ORDERS BY THE GOVERNOR

DEPARTMENT OF HOUSING AND URBAN AFFAIRS

NOTIFICATION

The 11th July, 2024

DoHUA EcF No.450508/2024/43.- In exercise of the powers conferred by the section 14 and Section 10 of the Assam Town & Country Planning Act,1959 (as amended) read with 2 (a) of Rule 3 of the Assam Town and Country Planning (Publication of Master Plan and Zoning Regulations) Rules, 1962, the Governor of Assam is pleased to publish the following notice regarding the publication of the Final Revised Master plan for Greater Sonari.

NOTICE FOR PUBLICATION OF THE REVISED MASTER PLAN FOR SONARI

1. It is notified that the Final Revised Master Plan for Sonari is prepared under section 14 of the Assam Town and Country Planning Act,1959 (as amended) by the Directorate of Town & Country Planning, Assam and adopred by the State Government for the area as described in the schedule below is hereby published.

2. The Final Revised Master plan with all relevant papers and maps may be inspected free of cost during the office hours at the office of the Director, Town & Country Planning, Dispur, Guwahati-6, Deputy Director, Town & Country Planning, District Office- Sivasagar, office of the Chairman, Sonari Development Authority, office of the Chairman, Sonari Municipal Board and Sonari Revenue Circle Office. Copy of the Final Revised Master Plan is available in the office of the Deputy Director, Town & Country Planning, District Office- Sivasagar for sale on payment.

SCHEDULE

A. Situation and Areas :

District : Charaideo
State : Assam
Area : 102.033 sqkm

Municipal Area : 8.00 sqkm

Circle, Mouza and Villages included in the Final Revised Master Plan area of Sonari

Circle	Mouza	Village
Sonari	Abhoipur	Naphuk Grant, Mohkhuti Pathar, Grant No.348, Joboka habi, Dakhin Sonari Goan, Grant No.324, Barpathar, Dakhin Sonari Habi, Borahi Kachari Gaon, Bhoju Gaon, Banfera Grant, Borahi Grant, Aideobari Kathani, Hingirijan Bagisa, Banfera Bagisa, Abhoipor Grant, Naphuk Gaon, Joboka Chah Bagisa, Teak Goan, Nagaon, Nakachari Gaon, Rongchowal Changmai Gaon, Sonari Grant, North Sonari Gaon, Teak Bengali Gaon, Sonari Town, Rajabari Grant, Raidangi Nakochari Gaon, Hingritoli Bengali Gaon.

B. Description of boundaries :

NORTH : BNORAHI KACHARI GAON AND TEAK BANGAL GAON
SOUTH : SONARI GRANT AND ABHOYPUR
EAST : BANFERA TEA ESTARE AND JOBOKA TEA ESTATE
WEST : HINGARITOOLI BANGAL GAON AND MOHKHUTI PATHAR

PABITRA RAM KHAUND,
Secretary to the Government of Assam,
Department of Housing and Urban Affairs,
Dispur, Guwahati-6

CHAPTER – 1:

1.1. LOCATION: -

Sonari is a district Headquarter,mid-size town with a municipal board of newly announced Charaideo District on 15 August 2015, in the Indian state of Assam. Sonari is an important industrial town in India. It has major Oil fields and major Tea producing areas.Sonari is a centre for tea and timber industries and is the gateway to the Mon district of Nagaland.The Sonari town may also be called as tea town of Assam as 60%of the master plan area of the town is covered by tea gardens.

Sonari is located at 27.07°N 95.03°E.[1] It has an average elevation of 97 m (318 ft).

Figure1.1: Map of India.Figure1.2: Map of Assam showing location of Sonari Town .

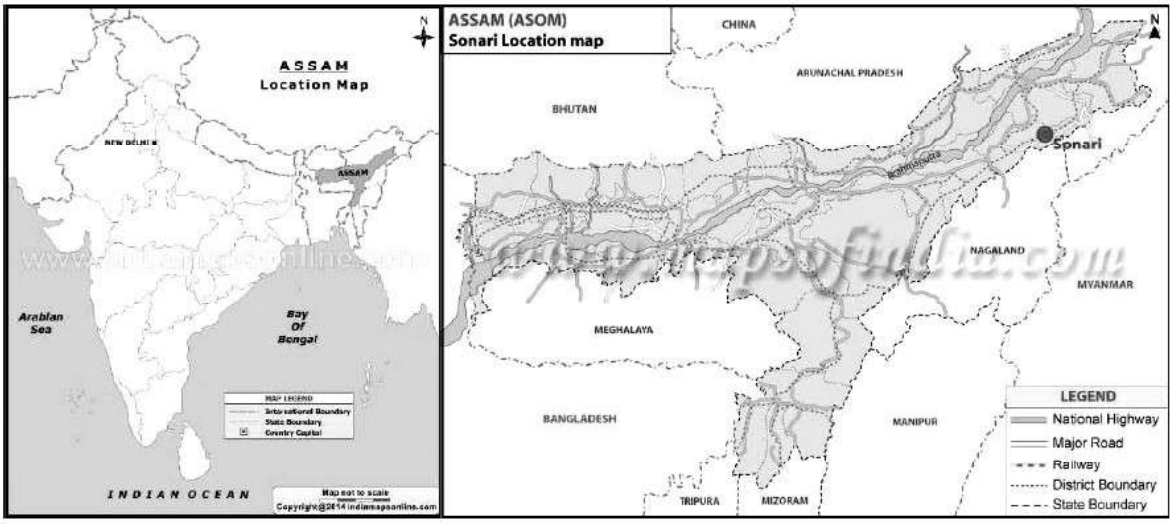
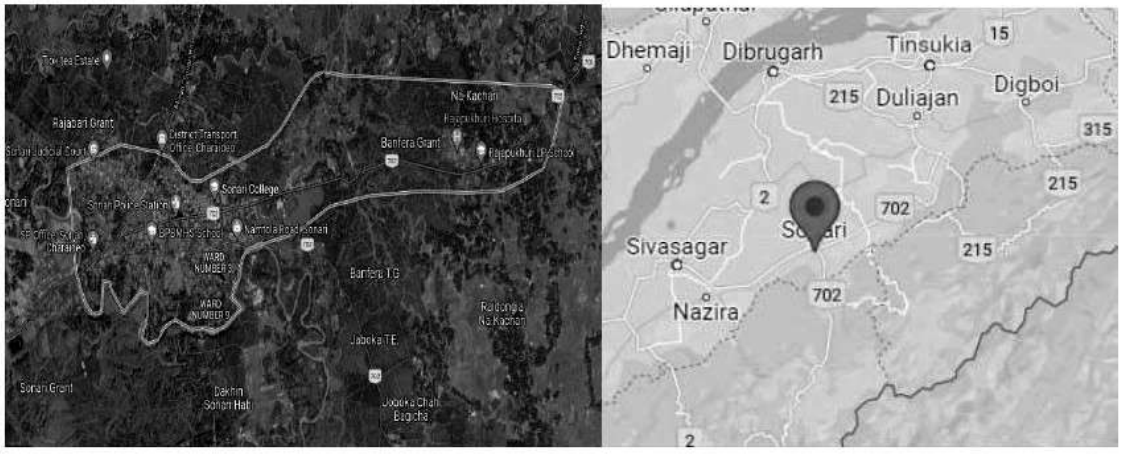


Figure1.3: Satellite Image of Sonari Town.

Figure1.4: Sonari Town on Google Map



1.2. REGIONAL SETTINGS:-

NORTH	:	BORAHI KACHARI GAON AND TEAK BANGAL GAON
SOUTH	:	SONARI GRANT AND ABHOYPUR
EAST	:	BANFERA TEA ESTARE AND JOBOKA TEA ESTATE
WEST	:	SINGARITOLI BANGAL GAON AND MOHKHUTI PATHAR

Sonari is located in the east of National Highway 37 at a distance of 51 kms.The nearest railway station is Bhoju at a distance of 15 kms from the district head quarter and the airport is at Dibrugarh district named Mohanbari is situated at a distance of 77 kms from the district head quarter.

1.3. BRIEF HISTORY OF THE TOWN AND SURROUNDINGS: -

In the middle of the town there is a park around a historic Ahom Kingdom's Tank called Bor Pukhuri which latter known as" Sonari Tank".

It is also claimed that the original name of Sonari was Sonapur. During the Ahom King's period in 1253 AD , the Godsmithsworking for the Ahom royals lived here giving the name of the town.There are even claims that Great Borahi King Mahamanikya lived in Rajadhap area of Sonari during the 15th century,in whose court Madhava Kandali translated Ramayana into Assamese before the era of Shankardeva.It is also believed that Bhogoniya Raja Jayadwaj Singha rested for days in Sonari before proceeding to Namrup during the invasion of Assam and Ahom capital by Aurangzeb's general Mirjumlah during 1663.One of the first two estates set up by Maniram Dewan has now been discovered by Dr . Pradip Baruah of the Tocklai Experimental Station of the Tea Research Association.Dewan established the Cinnamara TE at Jorhat and Senglung TE nearSuffry , Sonari , around 169 years back ,in 1845. Maniram Dewan was the first Indian tea planter.

1.4. CLIMATE: -

Climatically Sonari experiences similar condition with rest of the State with hot humid summer and cool winter. The Monsoon rain start from the month of May continues upto September.The highest maximum temperature during summer is 32.2"C and minimum temperature is 9.4"C. The average annual rainfall is about 3600.3mm. The prevailing wind direction of the town is from northeast to southwest.

TABLE: TEMPERATURE, HUMADITY AND RAINFALL

Month	Temperature		Humidity (%)	Rainfall(mm)	Number of rainy days
	Min	Max			
Jan	9.4	22.3	74.5	32.9	3.16
Feb	11.9	24.0	68.5	46.7	4.16
March	15.6	27.5	67.5	146.4	10.33
April	19.1	28.6	77.0	376.3	14.16
May	21.9	29.9	74.5	407.0	15.88
June	24.2	31.6	80.5	525.1	17.00
July	24.7	32.2	81.5	809.7	21.66
August	24.7	32.1	81.5	494.6	16.33
September	24.0	31.7	83.5	535.9	17.83
October	21.1	29.4	83.5	149.2	9.16
November	15.3	26.4	80.0	58.0	2.20
December	10.7	23.4	77.5	18.5	2.25
				3600.30	**134 days**

Source:Soil and Water management,Tocklai

1.5. TOPOGRAPHY: -

Sonari is located at 27.07°N and 95.03°E. It has an average elevation of 97 m (318 ft).Sonari town is flat with a gradual slope towards north and north-west. The two rivers Towkak and Teak are flowingin their zigzag course on the south and northwest of the town respectively. The Sonari town is located 67 kms from the mighty river Brahmaputra.

1.6. SOIL CONDITION: -

Surrounded by the tea gardens, forest and paddy fields Sonari is situated mostly on an alluvial flat land at a distance of 52 km from Sivasagar town and 67 kms from mighty river Brahmaputra.The two rivers Towkak and Teak are flowing their zigzag path on the south and northwest of the town respectively. Terraces of high-level alluvium of Pleistocene age occur along the south-eastern boundary of the Master plan area along the foothills to south eastern boundary of the district.One big tank namely Sonari Tank is aprominent water body,which was excavated during the Ahom region.

The altitudinally Sonari is 110.2m above the mean sea level,its latitude and longitude area 27''-3" N and95''-2"E respectively .The general slope of the land is towards North and Northwest.

The region bears texturally three types of soil - sandy loam, loam and clayey loam. These favour the cultivation of rice, mustard, pea, vegetables, etc. Thus, geographically the soil of Sonari Town is considered as favourable for cultivation and plantation.

1.7. CITY INFLUENCE AND IT'S CHARACTERISTICS INCLUDING SETTLEMENT PATTERN:-

The settlement pattern of Sonari is a mixed one. Due to the presence of teagardens, workers from Bihar and Orissa migrated in to the region.Officials fromTea and Oil industrysettled in Sonari. The indigenous people of the state live both in urban andrural areas. A good number of Marowari, Bengali, Bihari, Sikh and Muslim people reside inSonari.Population growth has been unusually rapid, mostly due to up gradation of Charaideo sub-division into district and thereby administrative growth of Sonari is observed.

1.8. RURAL-URBAN SCENARIO: -

Both rural as well as urban characteristics can be seen in Sonari town and its surroundings. Though people use modern techniques to build their houses but there still exist houses which have been built with old methods. Many people of the town still use bamboo fence around their house. The Economically weaker section households are easily identified by their poor housing condition. Due to low incomes, their houses are mostly kutcha or semi pucca type and lack basic infrastructure.

1.9. HISTORY OF THE PHYSICAL GROWTH AND EXPANSION OF THE TOWN: -

With the up gradation of Charaideo sub-division into a district on the 15th August, 2015 Sonarihas become one important town in the district. Govt. offices including Judiciary according to the norms have been established atSonari resulting in to rapid physical growth of the town. The physical growth andexpansion of the town has mainly taken place for the tea and oil industry which were developed by theBritish during British Era.

1.10. NEED FOR THE MASTER PLAN: -

A master plan or a development plan or a town plan may be defined as a general plan for the future layout of a city showing both the existing and proposed streets and roads, open spaces, public buildings etc. A master plan is a blueprint for the future development of the town.

A Master Plan, also called a comprehensive plan, provides a long-range vision for the built environment of a community. It guides the appropriate use of lands within a municipality in order to protect the public health and safety and to promote general welfare. Among other issues, the Master Plan can identify

- suitable locations for commercial, housing and mixed-use development;

- locations where the city should increase density, use redevelopment, orintervene in other ways;
- opportunities to extend and/or improve open space, recreational areas, and civic facilities;
- strategies from increasing economic development;
- environmental, historic and cultural resources that need conservation; and
- strategies for solving congestion and improving transit services.

As a result, the Master Plan has a direct relationship to its citizens, where we live, work, or own a business in that particular region.

Considering the present trend of growth of Sonari town,the future urban activities and needs,availability of urbanizable land and other environmental aspects.The master plan area has been delineated with the inclusion of the five numbers of villages in addition to the notified town committee areas namely Uttar Sonari,Dakhin Sonari,Grant No. 324. , Rajabari Grant and Banfera Grant.

The master plan area of Sonari covers an area of 102.033sq.km.having population of 81052 as per 2011 census and field survey conducted by Town and Country Planning,Sivasagar.

CHAPTER – 2:

DEMOGRAPHY

2.1. TOTAL POPULATION: -

Sonari Master Plan Area (SMPA) is Located in Charaideo district. According to census of India 2011, the total population of Sonari Master Plan area is 81052 persons out of which 41829are male and 39223are female.

Table 2.1: Urban & Rural Area Population Figure

Name of Master Plan Area	Category of Area	Area in Sqkm	Population in 2011
Sonari Master Plan Area	Urban	8.00	19810
	Rural	94.033	61242
Total		102.033	81052

2.2. MALE/FEMALE POPULATION: -

The details of Male and female population for the Sonari Master Plan Area (SMPA) are shown in the following table.

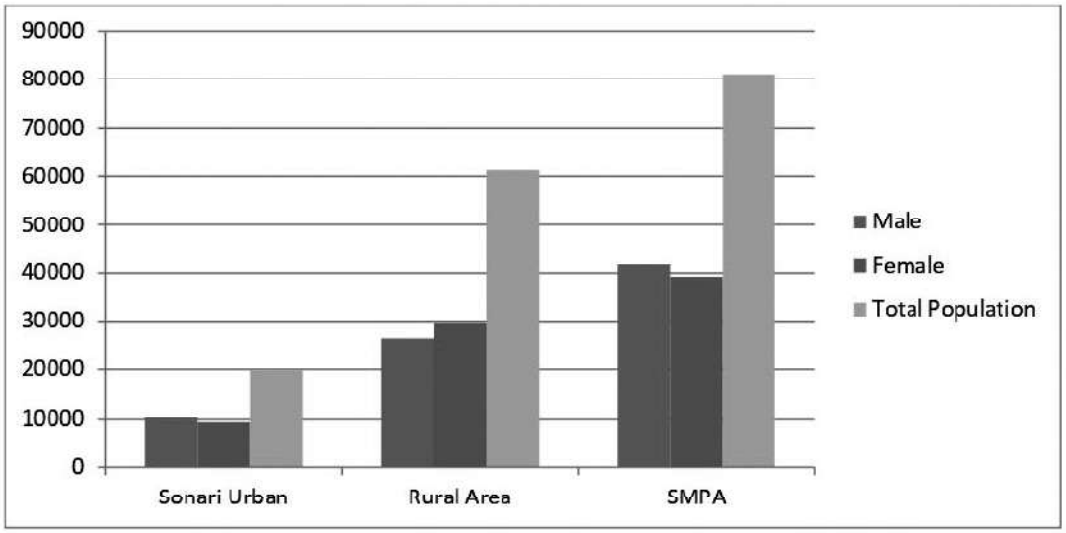
MALE AND FEMALE POPULATION OF SMPA IN 2011

Table 2.2: Charaideo District Areas / Town and Villages

Sl. no.	Name	Male	Female	Total Population
1	Naphuk Grant	2302	2279	4581
2	Mohkhuti Pathar	107	105	212
3	Grant No.348	34	32	66
4	Joboka habi	487	425	912
5	Dakhin Sonari Gaon	3866	3377	7243
6	Grant NO.324	834	810	1644
7	Barpathar	1783	1656	3439

8	Daskhin Sonari Habi	339	347	686
9	Borahi Kochari Gaon	1357	1350	2707
10	Bhoju Gaon	827	760	1587
11	Banfera Grant	323	253	576
12	Borahi Grant	947	937	1884
13	Aideobari Kathoni	1054	971	2025
14	Hingirijan Bagisa	555	544	1099
15	Banfera Bagisa	595	595	1190
16	Abhoipor Grant	277	297	574
17	Naphuk Gaon Grant	2574	2486	5060
18	Joboka Chah Bagisa	1822	1762	3584
19	Teok Gaon	2843	2690	5533
20	Nagaon	402	384	786
21	Nakachari Gaon	550	522	1072
22	Rongchowal Changmai Gaon	893	821	1714
23	Sonari Grant	482	448	930
24	North Sonari Gaon	32	38	70
25	Teok Bengali Gaon	1527	1518	3045
26	Sonari town	10381	9429	19810
27	Rajabari Grant	1112	1157	2269
28	Raidangi Nakochari Gaon	2383	2224	4607
29	Hingritoli Bengoli Gaon	1141	1006	2147
	Total	41829	39223	81052

Figure 2.2: Male/Female Population of SMPA



AREAS AND HOUSE HOLD OF SMPA IN 2011

Charaideo District Areas / Town and Villages

Sl. no.	Name	HH	Area (In hectare)
1	Naphuk Grant	980	578.68
2	Mohkhuti Pathar	46	258.00
3	Grant No.348	12	110.00
4	Joboka habi	200	154.73
5	Dakhin Sonari Gaon	1657	272.07
6	Grant NO.324	412	200.00
7	Barpathar	734	612.00
8	Daskhin Sonari Habi	154	208.76
9	Borahi Kochari Gaon	599	430.00
10	Bhoju Gaon	358	264.44
11	Banfera Grant	127	261.97
12	Borahi Grant	407	379.00

13	Aideobari Kathoni	432	489.64
14	Hingirijan Bagisa	222	342.00
15	Banfera Bagisa	241	217.46
16	Abhoipor Grant	121	173.00
17	Naphuk Gaon	1107	739.00
18	Joboka Chah Bagisa	724	745.07
19	Teok Gaon	1151	1051.94
20	Nagaon	152	146.90
21	Nakachari Gaon	222	171.23
22	Rongchowal Changmai Gaon	363	398.88
23	Sonari Grant	189	298.58
24	North Sonari Gaon	14	20.58
25	Teok Bengali Gaon	656	362.57
26	Sonari town	4571	8.00
27	Rajabari Grant	474	403.65
28	Raidangi Nakochari Gaon	995	640.75
29	Hingritoli Bengoli Gaon	491	264.45
	Total	17811	10203.35

2.3. POPULATION GROWTH RATE: -

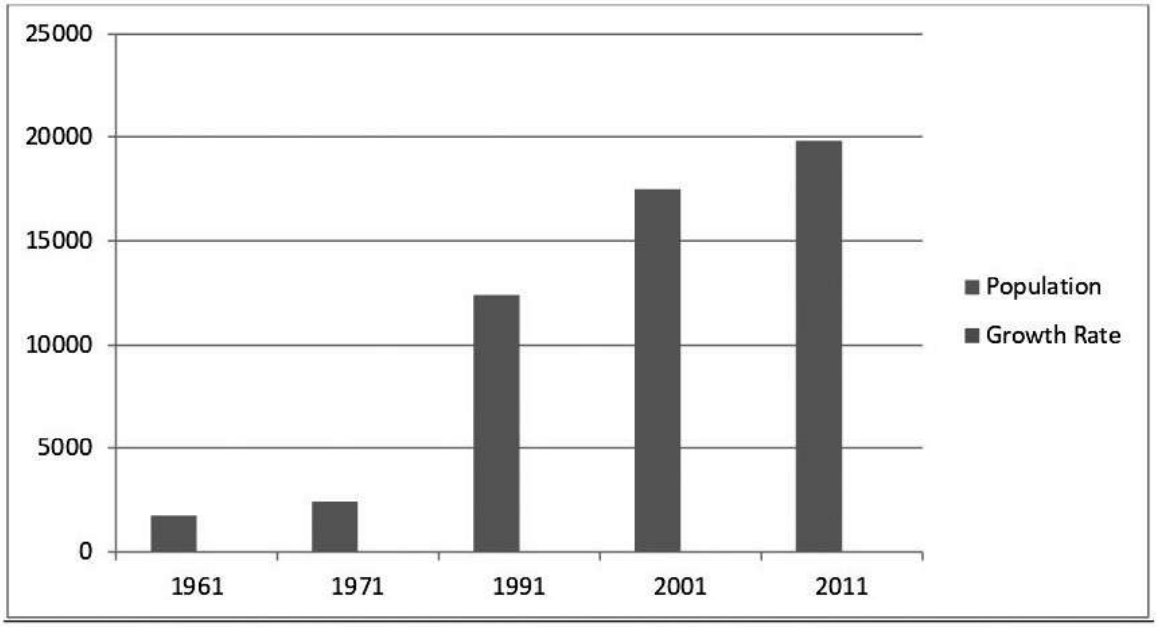
After 2011 census, 3 numbers of new wardsare included in the Sonari Municipal Board. Hence, the total number of wards in Sonari Municipal Board is 16 and having population of 19810(approx.) as per ULB report.

Table 2.3: Population Growth Rate in Sonari Municipal Board

YEAR	POPULATION	(%) INCREASE
1961	1772	-
1971	2438	37.58
1991	12398	-
2001	17502	41.16
2011	19810	13.18

Source: Census of India

Figure 2.3: Population Growth Rate in Sonari Municipal Board.



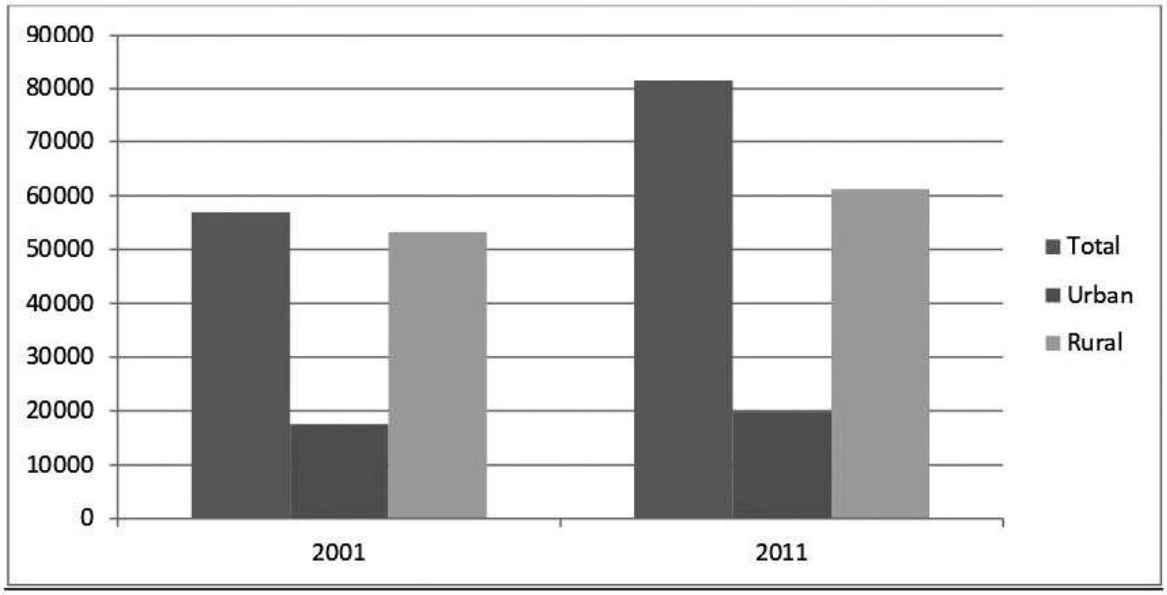
Source: Census of India

The decadal growth of population in the urban and rural areas of Sonari Master Plan area from 2001 to 2011 is shown in the following table: -

Table 2.4: Population Growth of Sonari Master Plan Area

Zone	Year	Population	Increase in Population	% Increase
Total	2001	70771	-	-
	2011	81052	10281	14.53
Urban	2001	17502	-	-
	2011	19810	2308	13.19
Rural	2001	53269	-	-
	2011	61242	7973	14.97

Figure 2.4: Population Growth of Sonari Master Plan Area

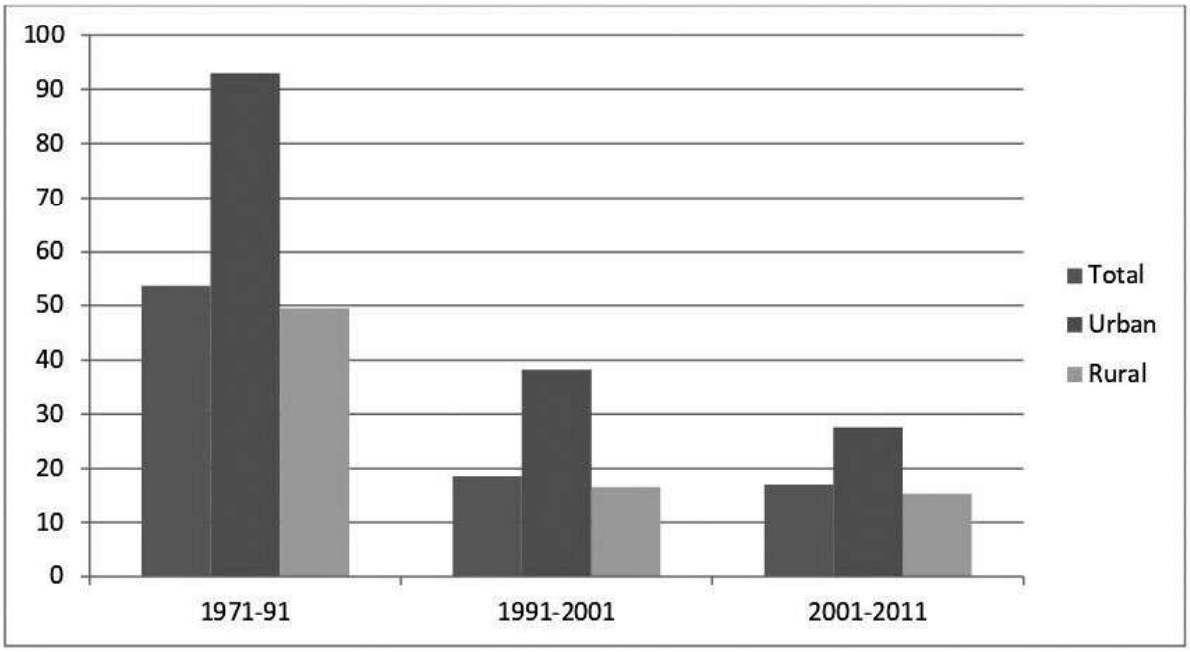


Source: Census of India

Table 2.5: Population Growth and Growth Rate of Assam

	POPULATION				GROWTH RATE (%)		
	1971	1991	2001	2011	1971-91	1991-2001	2001-11
Assam State*							
Total	14.62	22.49	26.66	31.17	53.83	18.54	16.93
Urban	1.29	2.49	3.44	4.39	92.97	38.24	27.61
Rural	13.33	19.93	23.22	26.78	49.42	16.51	15.35
*Population in thousand							

Figure 2.5: Population Growth Rate of Assam: 1971-2011



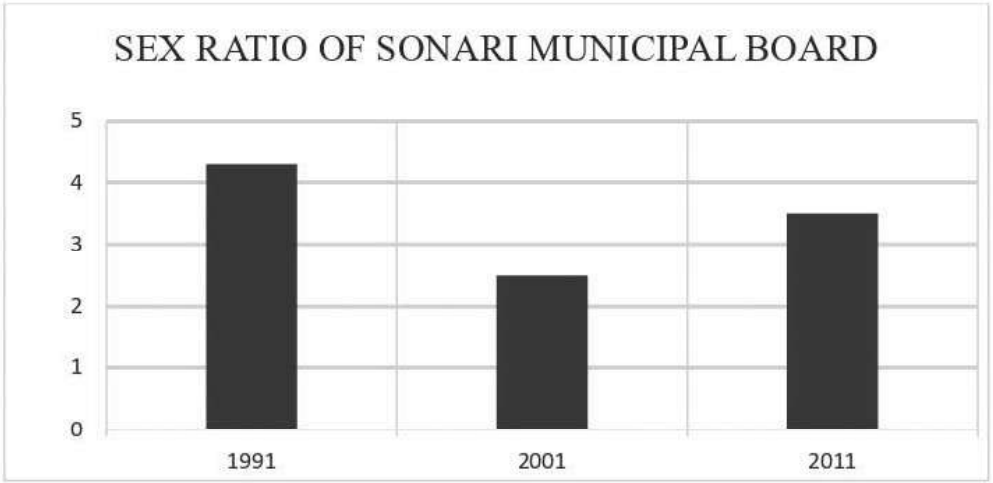
2.6. POPULATION DENSITY: -

The density of population ofSonari Municipal Board is2476 person per hectare.

2.7. SEX RATIO: -

In 1991 census, sex ratio inSonari Municipal Boarder was 860. The value was 825 in 2001 and 908 in 2011.

Figure 2.7: Sex Ratio of Sonari Municipal Board: 1991-2001-2011

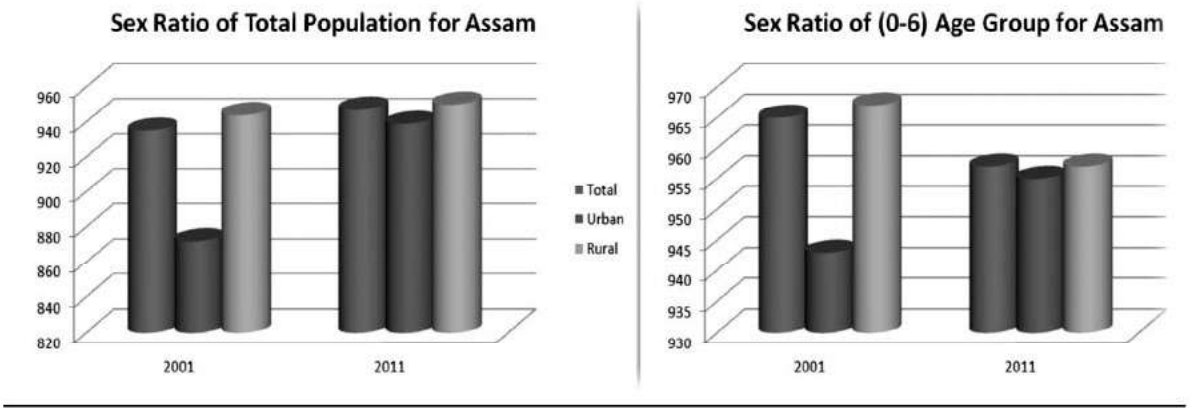


The sex ratio of Assam and SMPA for the last two decades as per census of India isgiven below:

Table 2.8: Sex Ratio of Assam and SMPA

	Sex Ratio of Total Population		Sex Ratio of 0-6 Age Group	
Year	**2001**	**2011**	**2001**	**2011**
Assam State				
Total	935	947	965	957
Urban	872	939	943	955
Rural	944	950	967	957
Sonari Master Plan				
Total	869	940	974	932
Urban	825	908	975	911

Figure 2.8: Sex Ratio of Assam



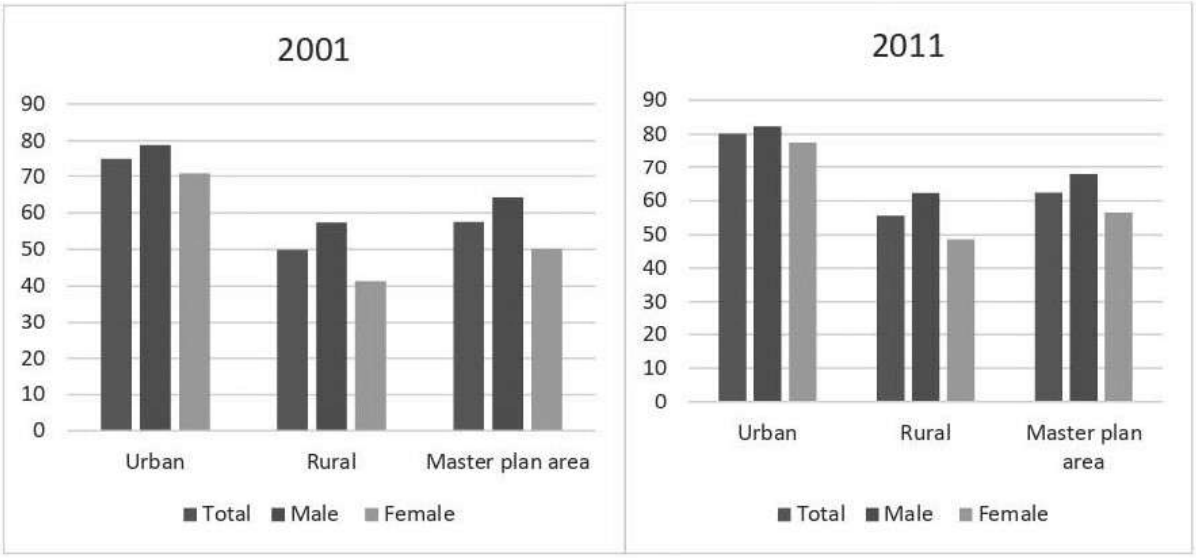
2.9. LITERACY RATE: -

The literacy rate of Sonari Urban area as per census of India report, 2011 is 80.15% which is lower than state urban literacy rate of 88.47%. Male Literacy is around 82.4% while female literacy rate is 77.6%. The comparison of literacy rate in 2001 and 2011 for Sonari Master Plan area is given below:

Table 2.9: Literacy Rate of SMPA

	2001						2011					
	Absolute			Literacy Rate			Absolute			Literacy Rate		
	Urban	Rural	Total Master Plan Area	Urban	Rural	Total Master Plan Area	Urban	Rural	Total Master Plan Area	Urban	Rural	Total Master Plan Area
Total	13167	19712	32879	75.23	49.9	57.7	15877	28768	44645	80.15	55.7	62.4
Male	5604	13969	19573	78.9	57.5	64.2	8560	16474	25034	82.4	62.3	67.9
Female	4450	8856	13306	70.8	41.4	50.2	7317	12294	19611	77.6	48.7	56.6

Figure 2.9: Literacy Rate of SMPA



2.10. WORKING AND NON-WORKING POPULATION:-

The total work force in Sonari master plan area in 2011 is 27693 persons. Thework force is calculated considering the age group between 15 to 60 years. Out of this, work force the working population is equivalent to 36.63%which is lowerthan the national average of 38%. The balance non-workingpopulation(63.18%) mainlyconsists of women group and unemployed section of the population who are seekingemployment in white-collar jobs as well as investment opportunities in business.

2.11. ST-SC POPULATION: -

As per census 2011, thedetails of SC and ST population for the Sonari Master Plan Area (SMPA)havebeen shown in the following table.

SC-ST POPULATION

Table 2.8: SC and ST population of SMPA IN 2011

Sl. no.	Name	SC	ST
1	Naphuk Grant	0	0
2	Mohkhuti Pathar	0	0
3	Grant No.348	49	0
4	Joboka habi	0	2
5	Dakhin Sonari Gaon	0	0
6	Grant NO.324	0	0
7	Barpathar	554	4
8	Daskhin Sonari Habi	0	2
9	Borahi Kochari Gaon	420	0
10	Bhoju Gaon	0	5
11	Banfera Grant	0	0
12	Borahi Grant	27	0
13	Aideobari Kathoni	9	84
14	Hingirijan Bagisa	0	142
15	Banfera Bagisa	3	0
16	Abhoipor Grant	0	0
17	Naphuk Gaon Grant	66	1
18	Joboka Chah Bagisa	9	12
19	Teok Gaon	196	187
20	Nagaon	472	0

21	Nakachari Gaon	49	12
22	Rongchowal Changmai Gaon	0	0
23	Sonari Grant	0	0
24	North Sonari Gaon	0	0
25	Teok Bengali Gaon	49	4
26	Sonari town	831	158
27	Rajabari Grant	27	1
28	Raidangi Nakochari Gaon	0	0
29	Hingritoli Bengoli Gaon	218	3
	Total	2979	617

Figure 2.11: SC Population of SMPA

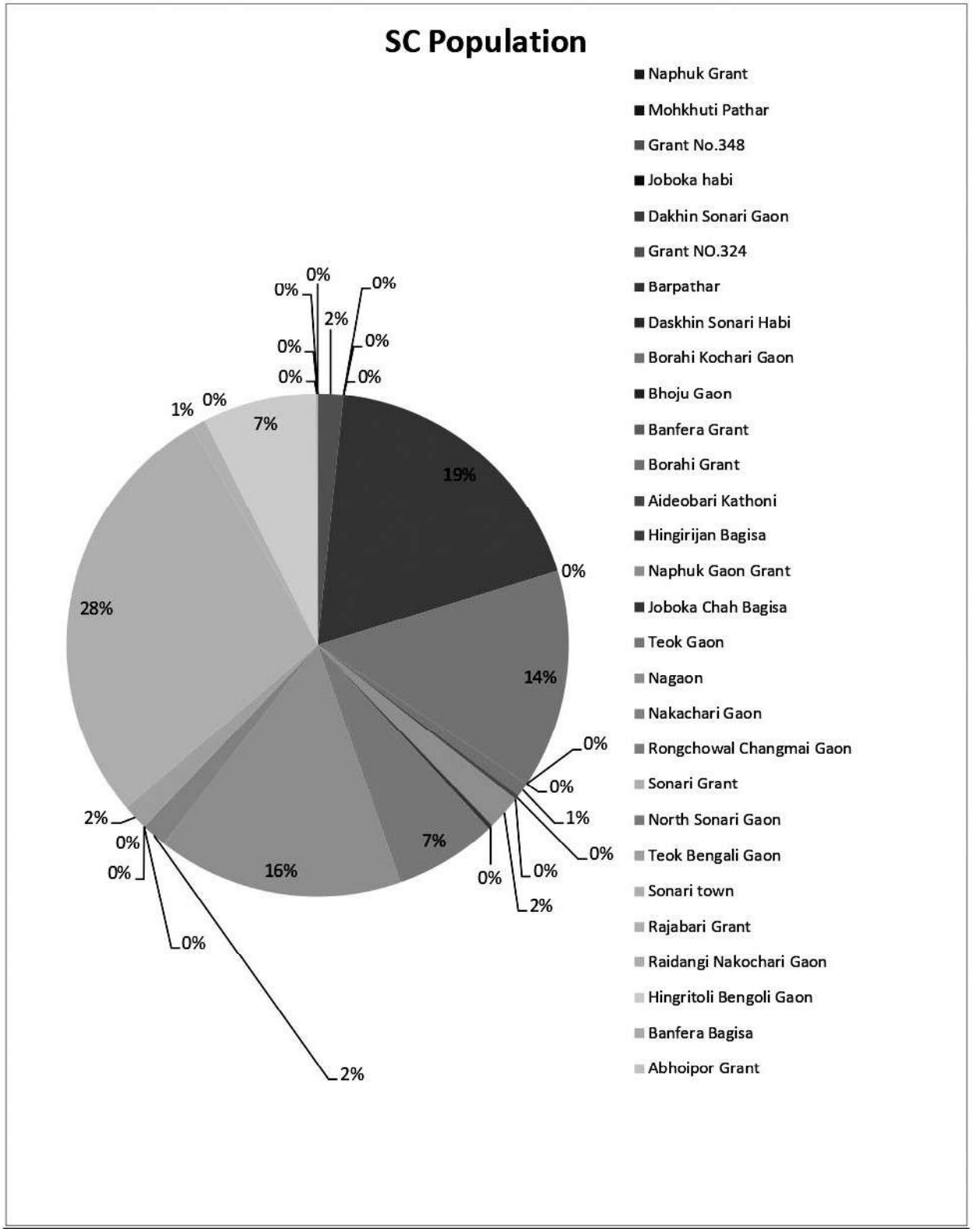
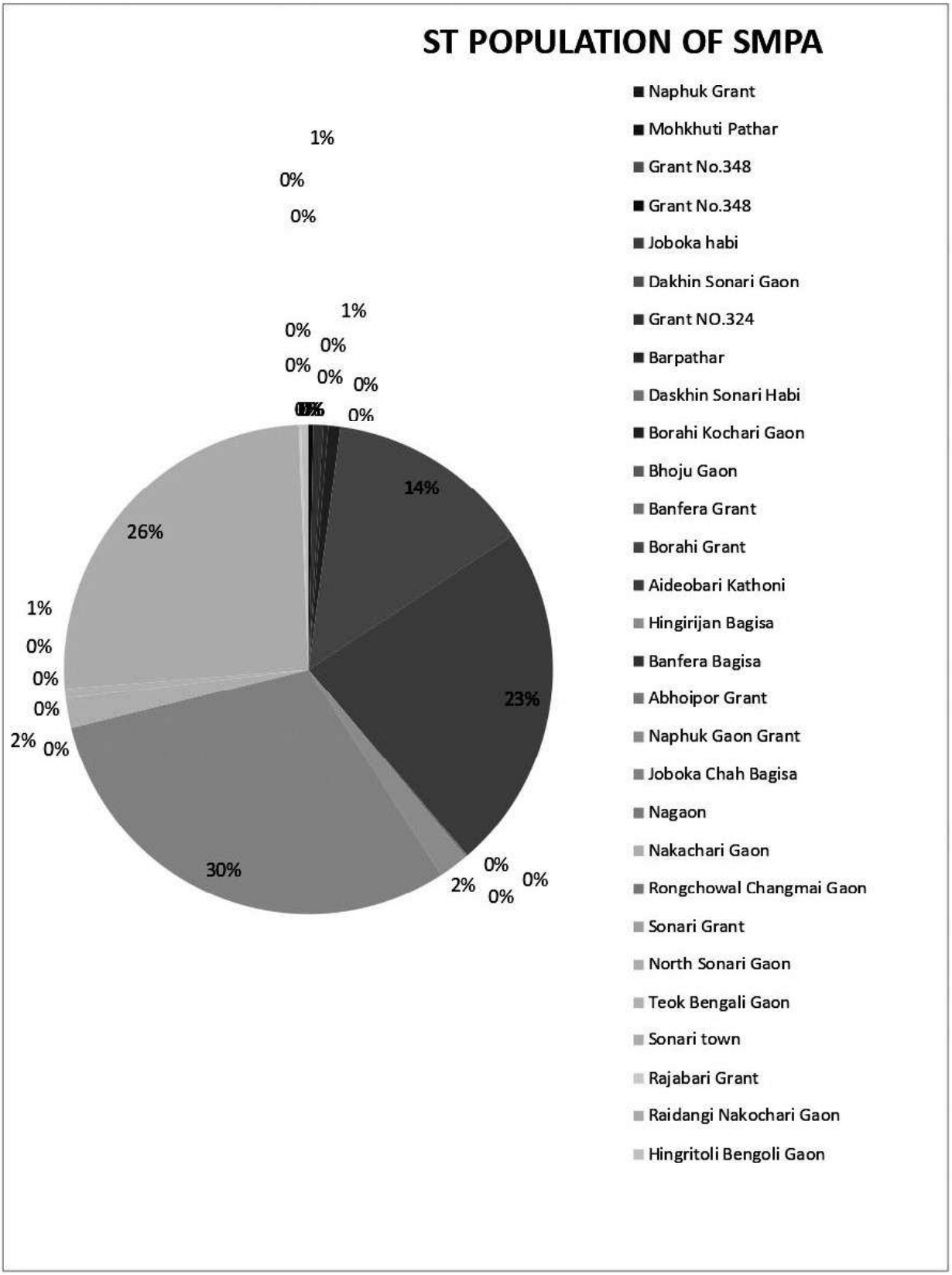


Figure 2.11: ST Population of SMPA



2.12. MIGRATION OF POPULATION: -

The robust local economy once attracted scores of people from other parts of thecountry to settle here in search of jobs and business opportunities. In addition to Assameseand various indigenous ethnic groups, the town is home to hundreds of people who migratedfrom undivided Bengal, Bihar, Uttar-Pradesh, Rajasthan to change their fortunes.

2.13. HOUSEHOLD DENSITY AND SIZE: -

Thereare about 8552 residential houses in the year 2011 in Sonari Final Revised Master PlanArea housing a total population of 81052 persons, as such, household size is 5.20personsper house and the house hold density is 268 houses per sq.km.

2.14. POPULATION PROJECTION: -

Inmaking the future population projection forSonariFinal Revised Master Plan Area for theperiod 2022-2042, all the relevant factors such as changes in fertility and mortality rate, age,sexcomposition of the population, existing land use pattern, socio-economic condition andexpected emigrational flows have been considered.

For the projection, a general fertility rate of0.19 for woman in a productive agegroup has been assumed. Mortality trends is based on recent experience of India and thetrends on increase on life expectancy on the United Nations model life table for underdeveloped countries.

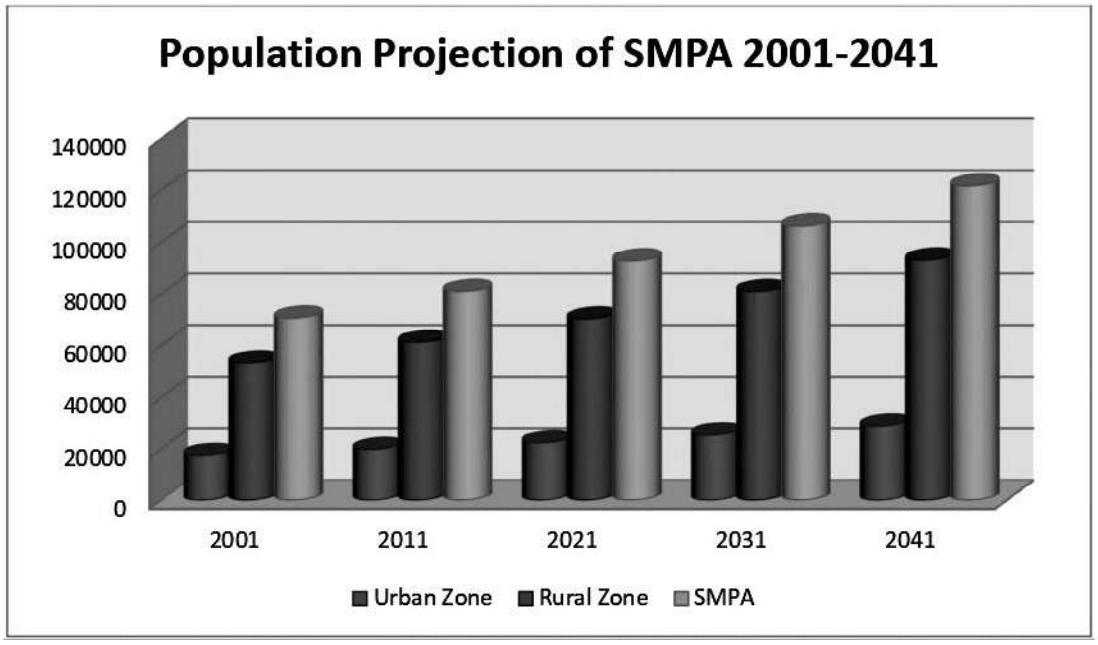
The final population projections have thus been arrived at with the entire basepopulation of 2011 accounted for as the natural population, by adding to the naturalpopulation, the increase due to the natural growth plus the increase due to emigrational flowof trade & commerce purpose including the natural increase of migrants. The following table shows the population projections up to 2041 for the urban and rural zones of SonariFinal Revised Master Plan Area.

Table 2.14: Population Projection of SMPA 2001-2041

Year	Urban Zone	% Increase	Rural Zone	% Increase	Total Population of Sonari Master Plan Area	% Increase
2001	17502	-	53269	-	70771	-
2011	19810	13.20	61242	14.97	81052	14.53
2021	22424	13.20	70409	14.97	92828	14.53
2031	25383	13.20	80994	14.97	106315	14.53
2041	28733	13.20	93118	14.97	121762	14.53

Note: 2021, 2031 & 2041 population figures are estimated as per decade average growth rate of 2001 and 2011.

Figure 2.14: Population Projection of SMPA 2001-2041



CHAPTER -3
ECONOMIC BASE AND EMPLOYMENT

3.1. FORMAL SECTOR: -

The Master Plan for Sonari stresses on the urgent need for creation of aconductive environment in which optimum use of natural, local and regional resources can be utilized to build up a sound economic base.

Sonari is a centre for tea gardens and oilfields. There are several Tea gardens and small industries around Sonari Town. Other important industries in Sonari are Timber, Rice, Floor, Cottage and light manufacturing units. In order to provide adequate employment opportunities in the future, the establishment of new industry should be encouraged and the rate of industrial growth needs to be stepped up considerably along with the expansion of service sector, so that it can keep pace with the population growth of this area. The future employment pattern of Sonari town will largely be associated with the growth of economic activities within the area.With the increase in administrative functions as the new District head quarter and establishment of a Medical College, Sonari is likely to have a considerable growth of activities in the service sector and trade and commerce as well.Sonari being the eastern most gateway for the state of Nagaland and as well as recent discovery of Oil and Natural gas in and around Sonari.This sector will experience a rapid development. There is aample potentiality within the area for the growth of secondary sector too.

Assam is known as the place of one bud with two leaves. Assam's tea is not only famous within the country but it has alsogoodwill & demand in the internationalmarket. There are several tea gardens in Sonari and its suburb area. Moreover, a good number of small teagardens are also established in the suburb area of Sonari boosting the socio-economiccondition of the town.

Sonari region has a scope for establishing industry associated with tea gardenimplements, equipment of drilling, fabrication etc and other non-ferrous utensil units,casting and general engineering industries.

3.2. INFORMAL SECTOR: -

There is an English proverb that "Necessity is the mother of all inventions". With rapid growth of Sonari town, a number of Brick-kiln and Stone crusher industries have been setup in and around the planning area to construct house, road & bridges etc.The demand for bricks and stone is increasing day by day due to the establishment of new house, office building and institution etc.

The region is rich in forest resources which have not been exploited fully. But there is a good scope of various wood based and bamboo-based industries, which can be taken up on a small and medium scale like safety matches, tea chests, furniture and pre-fabricated housing units etc.

The industrial development targets proposed above can be achieved through private sector & Governmental agencies by providing developed industrial land with necessary infrastructure like roads, power, water and drainage and incentive measures like rebate on power expenses, financial assistances in the form of loan at reasonable interest etc. The present concept of public-private partnership (PPP) can also be adapted for faster and smooth development of industries.

Sonari Town is the nerve centre of business & service of that area. Within theradius of 20 km distance, people use to come here to sell their produce and to buy necessary goods for their domestic consumption. There is amarket in the middle of the town.Produces from nearby villages like Mahmora,Kakatibari are sold near this market.The area is not fully utilized and developed.There are about 856nos of retail shops and 87 nos. of commercial establishments within the Sonari Municipal area.In Sonari Town there are alsosome markets namely Sonari Daily market,Baruah market,Mini market,Super market,Sonari Sunday weekly market,Chaliha market etc.which fulfil the demand for Sonari & its suburbs. These markets have played an important role in the economic expansion of Sonari Town.

Earlier the people of Sonari need to go to Dibrugarh&Sivasagar for the banking transactions. But now, a number of nationalised banks such as State Bank of India,UCO Bank, United Bank of India,Canara Bank, Assam Gramin Vikash Bank, IDBI Bank, Axis Bank etchave established their branches at Sonari. Presently, the banking service at Sonari has improved because of these banks. The financial condition of the people has been improved along with strengthening of economic structure due to money mobilization by these banks. Moreover, insurance companies are also playing an important role for expansion of trade & commerce, social security and socio-economic development.

3.3. OCCUPATIONAL PATTERN: -

Occupational structure depicts the characteristics of employment for livelihood of the people living in a particular planning area.The engagement of people in industry, trade, commerce, white-collar jobs etc. is known asthe occupation & employment character. In 2001, the total number of workers in Sonari Master Plan Area was about 21870, which constitute 38.39% of total population. In 2011, the total number of workers in Sonari Master Plan Area is about 29693out of which urban worker constitutes 8400 and rural is 21293.The percentage ofworkers engaged in primary, secondary and tertiary sectors of occupations are 0.74%, 3.95% and 95.31% in the Urban Area and 10.61%, 2.36% and 87.03% in the Rural Area respectively. Inthe Planning area as a whole, the worker

engaged in primary, secondary and tertiary sectorsof occupations are7.82%, 2.80% and 89.38% respectively.

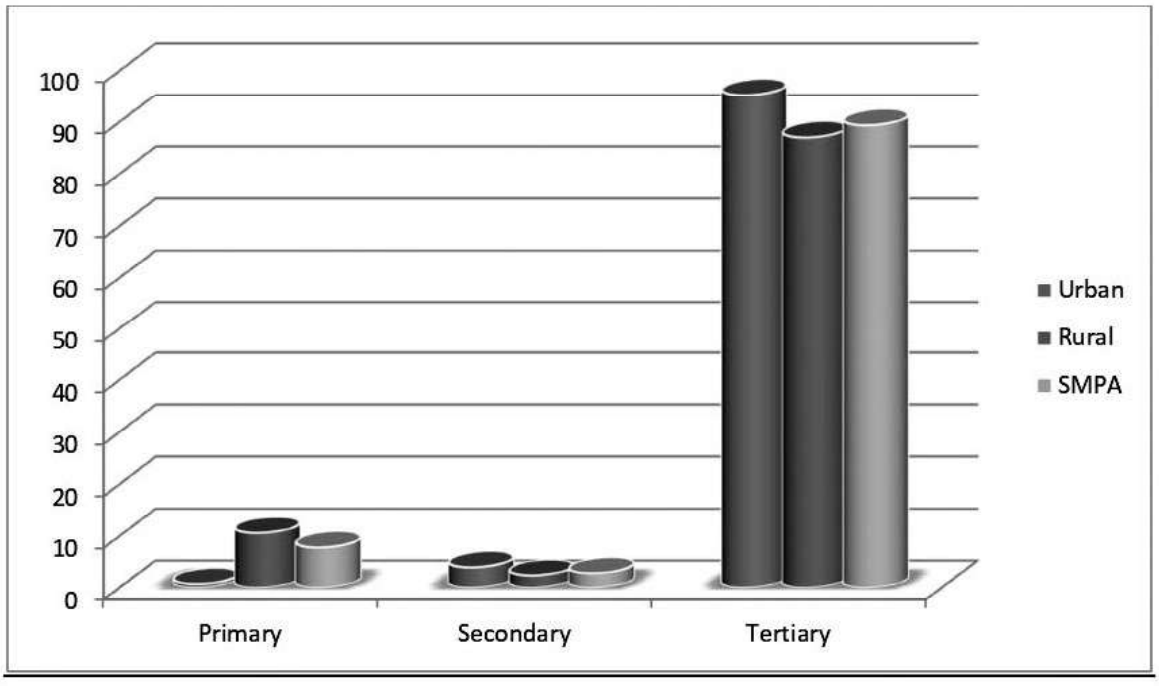
The occupational distribution of population in Sonari Master Plan Area of 2011 has beenshown in the following table: -

Table 3.3: Occupational Distribution of Population in SonariFinal Revised master Plan Area in 2011

Sl. No.	Category	Urban Area		Rural Area		Sonari Master Plan Area	
		No. of Workers	% of total workers	No. of Workers	% of total workers	No. of Workers	% of total workers
1	Primary Sector	62	0.74	2258	10.61	2320	7.82
2	Secondary Sector	332	3.95	502	2.36	834	2.80
3	Tertiary Sector	8006	95.31	18533	87.03	26539	89.38
	Total	8400	100.00	21293	100.00	29693	100.00

Source:Economics and Statistics Department and T&CP compilation.

Figure 3.3: Percentage of Total Worker



The above table reveals that the number of people engaged in the secondary sector is higher in the Rural Area than in the Urban Area. This is due to the fact that in the suburbs of Sonari Town, there is the existence of tea gardens. The number of people engaged in primary sector in the

planning area is low incomparison to the tertiary sector. The highest number of people is engaged in the tertiary sectors in the planning area.

The people of nearby villages have been blessed with the alluvium& fertile soil by the riverTeok, which begets rich crops and this is the main source oflivelihood for them.Secondly, due to expansion of micro, cottage &service industry, Sonari Town hasbeen developing day by day providing source of living to many people. In view of the above,the question of livelihood can be discussed on the following heads mentioned below: -

- Engaged in industry like Tea, Rice, Floor and Cottage etc.
- Engaged in cultivation.
- Engaged in business.
- Serving as a Govt. employee & private employee.

CHAPTER - 4
HOUSING AND SHELTER

4.1. HOUSING SCENARIO: -

Housing covers a large portion of an urban settlement at any point of time, it influences the quality of urban life, which in turn, affects the efficiency condition in SonariTown is mainly characterized by inadequate amenities essential for standard living.

Though the houses in Sonari have been primarily designed for singlefamilyoccupancy, the above figure supports the commonly observed situation of familiesdoubling up in single-family dwelling units. According to 2011 census density of population inSonari town is3549 persons per sq.km. In the Master Plan Area as a whole the density of population is1392 persons per sq.km, in 2011. The rate of construction of new houses has not kept pace withthe rate of increase of population mainly in the urban area.

Residential buildings of Sonari are of mixed types. Generally, in the old residentialareas of urban zone Assam type houses and in the newly developed areas R.C.C. houseshave been seen. In the rural areas more than 50% houses are Kutcha.

4.2. HOUSING SUPPLY MECHANISM: -

Housing supply is the main role of the state to improve living condition of theinhabitants either by direct provision or by enabling its provision. Different policies have beentaken by the government to solve the housing problems especially for poor and low-income group.Housing supply must address all social groups in the State including housing in urban areas, semi-urban areas and rural areas.In the recent years private builders and developers have come forward to solve the problems of housing in urban areas of the state by constructingflat. However, at the present such practices have not been seen in Sonari Town. In therural areas of Master plan area a few houseshave been constructed under centrally sponsored housing scheme. Recently housing in urban areas has been initiated by the central government through "Pradhan Mantri Awas Yojana – Housing for All (Urban)''scheme.

4.3. HOUSING CONDITION, TYPE OF STRUCTURE ETC.: -

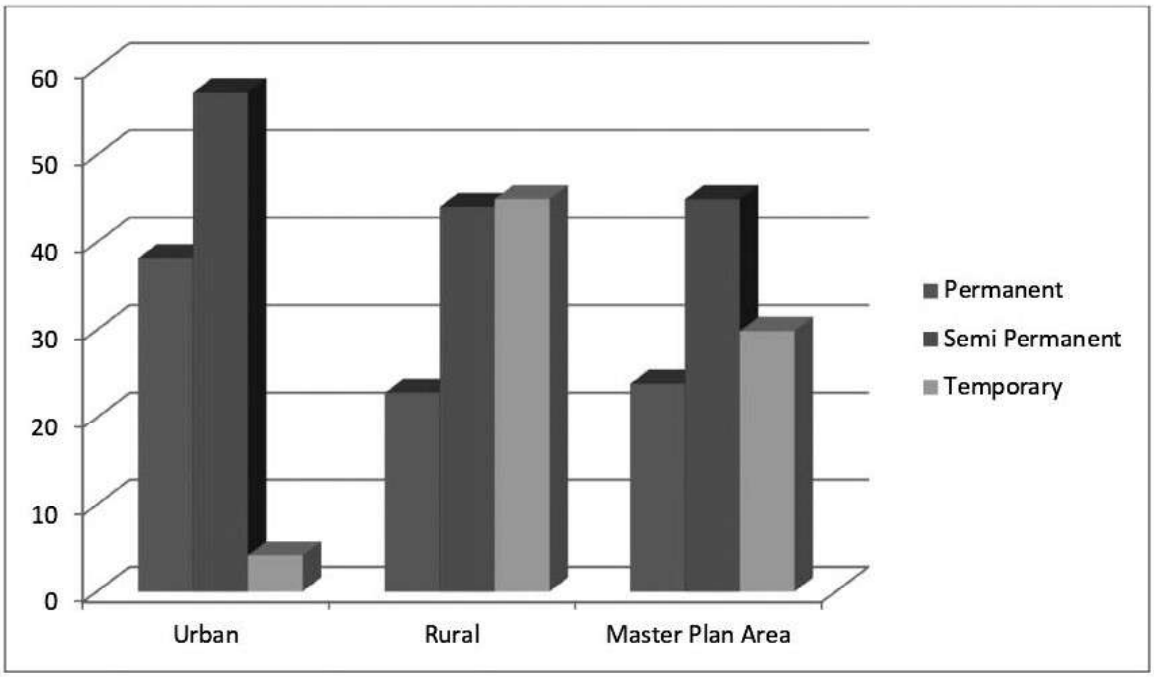
Number and percentage distribution of persons living in permanent, Semi Permanent and Temporary house in 2011 are shown in the table below:

Table 4.3: Housing Condition, Type of Structure

Housing Condition	Urban Area		Rural Area		Master Plan Area	
	No. of Households	Percentage %	No. of Households	Percentage %	No. of Households	Percentage %
Permanent	1759	38.15	14646	22.85	16405	23.88
Semi-Permanent	2637	57.19	28223	44.04	30860	44.92
Temporary	192	4.16	20339	31.74	20531	29.89

Source : Census of India.

Figure 4.3: Housing Condition



Census of India.

Table 4.3: Number and Percentage of Households by Source of Lighting

Particulars	Urban		Rural		Master Plan Area	
	No. of Households	Percentage %	No. of Households	Percentage %	No. of Households	Percentage %
Electricity	3997	86.68	25052	39.09	29049	42.29
Kerosene	553	11.99	38453	60.00	39006	56.78
Solar	15	0.33	337	0.53	352	0.51

Other Oil	13	0.28	38	0.06	51	0.07
Any Other	5	0.11	34	0.05	39	0.06
No Lighting	28	0.61	172	0.27	200	0.29
Total	4611	100	64086	100	68697	100

Source: Census of India.

Figure 4.3: Number of Household by Source of Lighting (%)

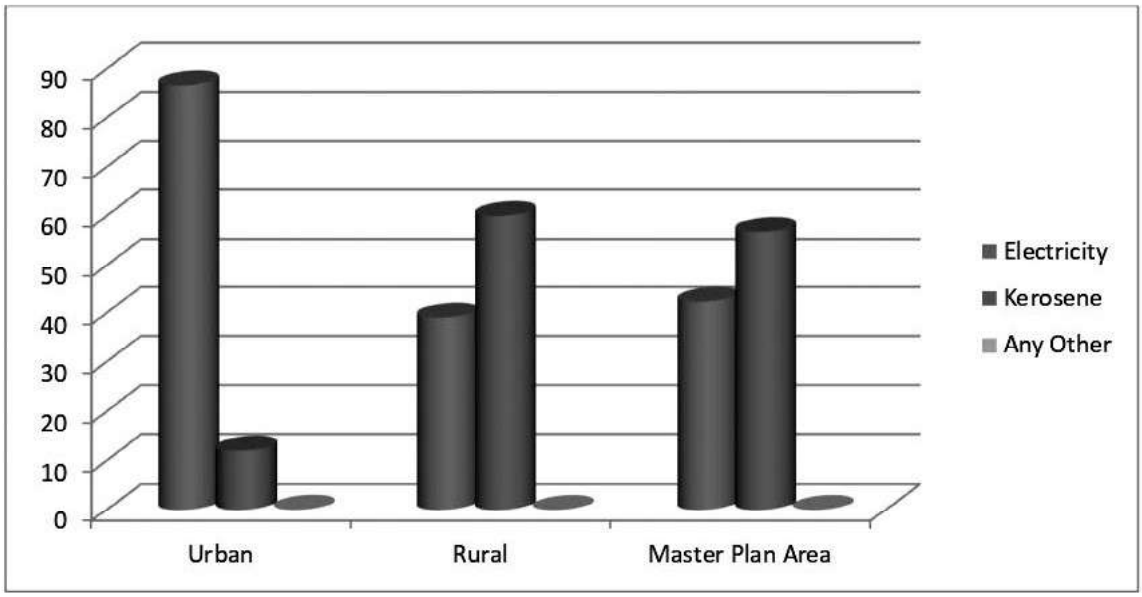


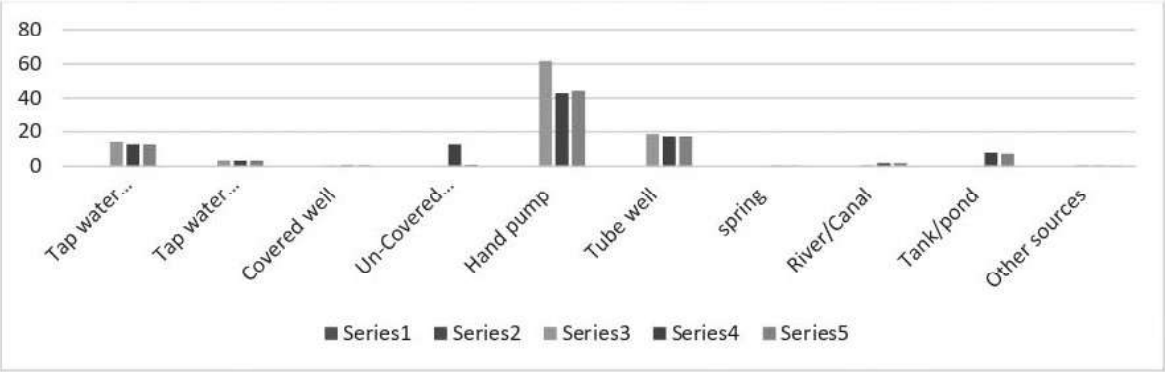
Table 4.3: Number and Percentage of Households by Main Source of Drinking Water

Particulars	Urban Area		Rural Area		Sonari Master Plan Area	
	No of Households	Percentage %	No of Households	Percentage %	No of Households	Percentage %
Tap water from treated source	656	14.23	8199	12.79	8855	12.89
Tap water from untreated source	160	3.47	2135	3.33	2295	3.34
Covered well	16	0.35	396	0.62	412	0.60
Un-covered well	13	0.28	8186	12.77	8199	1.03
Hand pump	2841	61.61	27469	42.86	30310	44.12
Tube well	861	18.67	10954	17.09	11815	17.20
Spring	1	0.02	217	0.34	218	0.32

River/Canal	26	0.56	1197	1.87	1223	1.78
Tank/Pond	11	0.24	5044	7.87	5055	7.36
Other source	26	0.56	289	0.45	315	0.46
Total	**4611**	**100**	**64086**	**100**	**68697**	**100**

Source:Census of India

Figure 4.3:Source of Drinking Water(%).



Source: Census of India.

Table 4.4: Number and Percentage of Households by Type of Fuel Used for Cooking

Particulars	Urban Area		Rural Area		Sonari Master Plan Area	
	No of Households	Percentage %	No of Households	Percentage %	No of Households	Percentage %
Firewood	1376	29.84	55863	87.17	57239	83.32
Crop residue	37	0.80	628	0.98	665	0.97
Cow dung cake	3	0.07	69	0.11	72	0.10
Coal etc.	3	0.07	19	0.03	22	0.03
Kerosene	214	4.64	110	0.17	324	0.47
LPG/PNG	2927	63.48	7082	11.05	10009	14.57
Electricity	1	0.02	23	0.04	24	0.03
Bio-gas	9	0.20	39	0.06	48	0.07
Any other	1	0.02	89	0.14	90	0.13
No cooking	40	0.87	164	0.26	204	0.30
Total	**4611**	**100**	**64086**	**100**	**68697**	**100**

Source: Census of India.

Figure 4.4: Type of Fuel Used for Cooking (%)

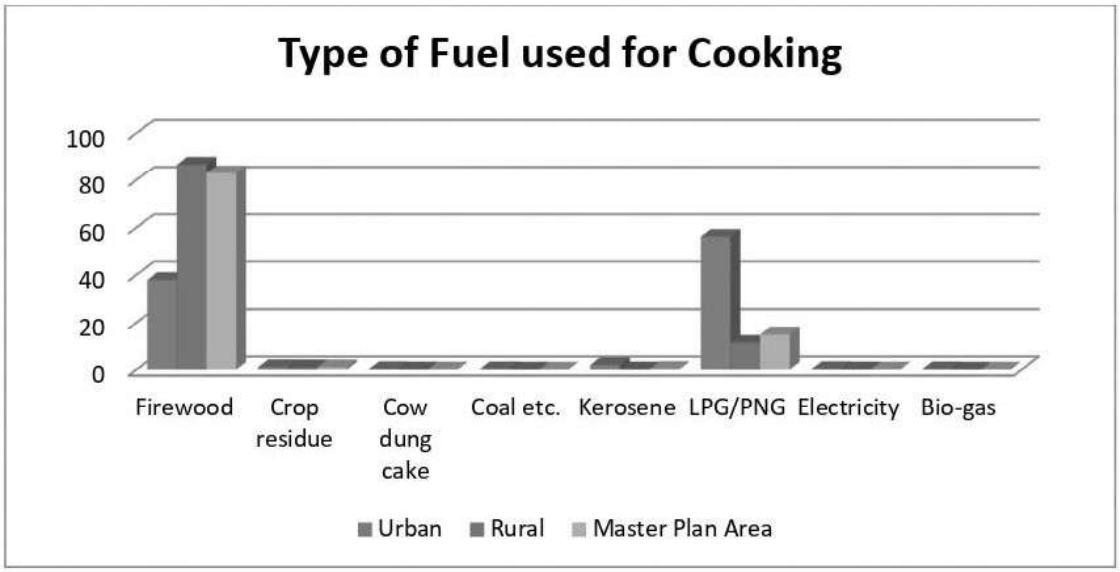


Table 4.5: Number and Percentage of Households Availing Banking Services and Number of Households Having Each of the Specified Assets

Particulars	Urban Area		Rural Area		Sonari Master Plan Area	
	No of Households	Percentage %	No of Households	Percentage %	No of Households	Percentage %
Banking Services	3317	71.94	25396	39.63	28713	41.80
Radio	800	17.35	13953	21.77	14753	21.48
Television	3195	69.29	20252	31.60	23447	34.13
Computer/Laptop with Internet	238	5.16	777	1.21	1015	1.48
Computer/Laptop without Internet	466	10.11	2663	4.16	3129	4.55
Landline Telephone	106	2.30	838	1.31	944	1.37
Mobile Telephone	3430	74.39	23090	36.03	26520	38.60
Both Land line and	287	6.22	1737	2.71	2024	2.95

Mobile Telephone						
Bicycle	2753	59.71	38710	60.40	41463	60.36
Scooter/ Motor Cycle/ Moped	1231	26.70	7272	11.35	8503	12.38
Car/ Jeep/ Van	514	11.15	2251	3.51	2765	4.02
None of the specified asset	341	7.40	16249	25.35	16590	24.15

Source: Census of India.

Figure 4.5: Households Availing Banking Services and Having Each of the Specified Assets

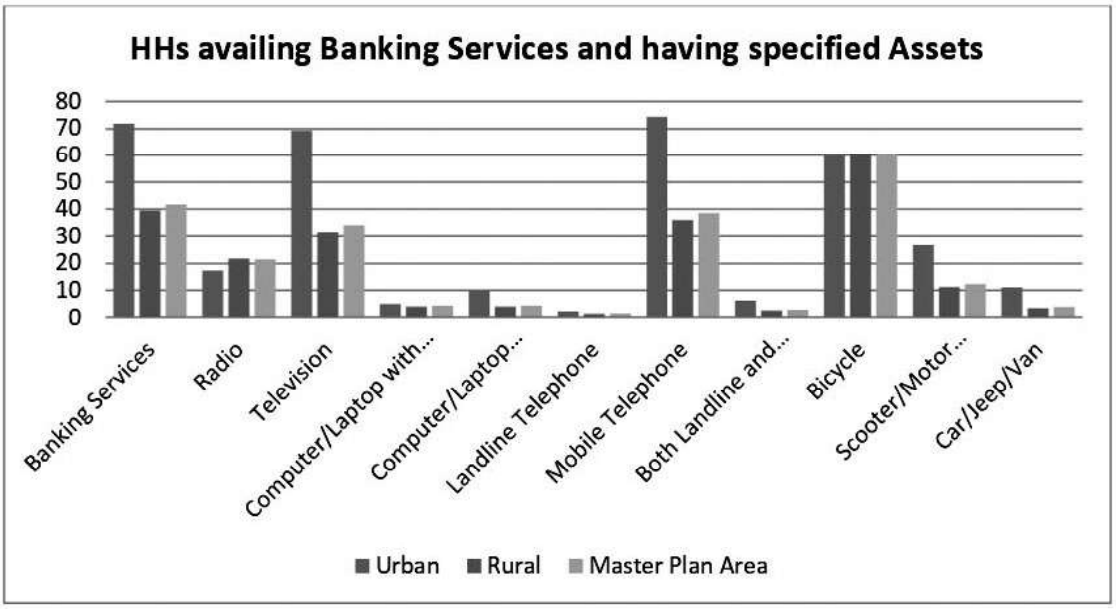


Table 4.6: Number and Percentage of Households by Type of Drainage Connectivity for Waste Water Outlet

Type of Drainage	Urban Area		Rural Area		Sonari Master Plan Area	
	No of Households	Percentage %	No of Households	Percentage %	No of Households	Percentage %
Closed Drainage	117	2.54	805	1.26	922	1.34
Open Drainage	1289	27.95	13196	20.59	14485	21.09
No Drainage	3205	69.51	50085	78.15	53290	77.57
Total	4611	100	64086	100	68697	100

Source: Census of India.

Figure 4.6: Households by Type of Drainage Connectivity for Waste Water Outlet

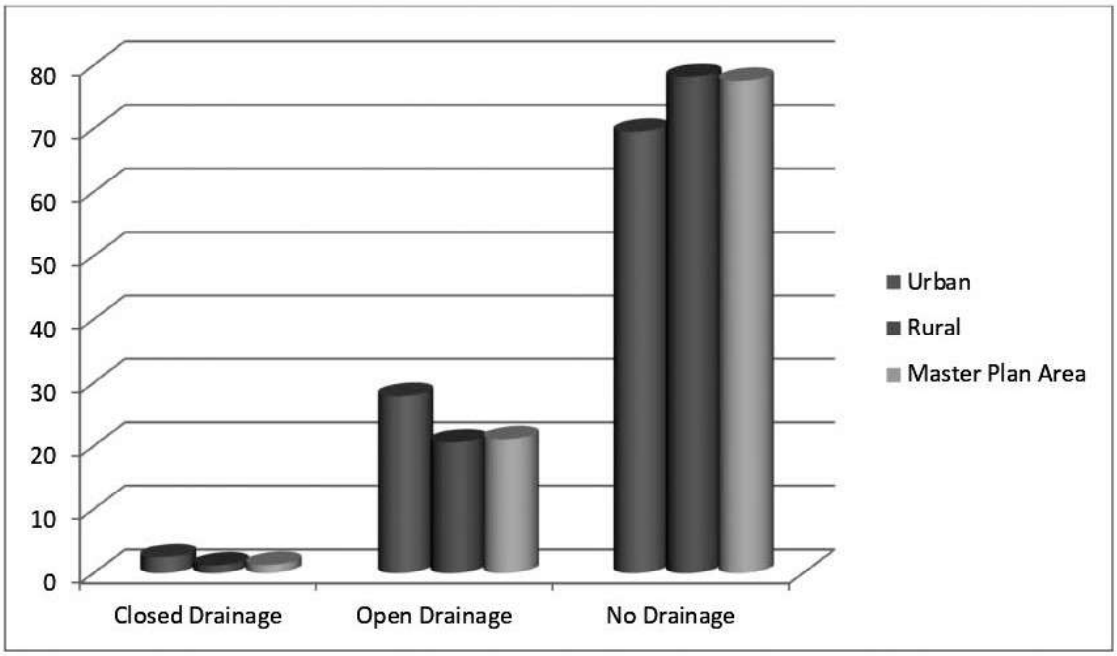


Table 4.7: Number and Percentage of Households by Availability of Kitchen Facility

Availability of Kitchen		Urban Area		Rural Area		Sonari Master Plan Area	
		No of Households	Percentage %	No of Households	Percentage %	No of Households	Percentage %
Cooking inside House	Has kitchen	4337	94.06	55796	87.06	60133	87.53
	Does not have kitchen	185	4.01	4423	6.90	4608	6.71
Cooking outside House	Has kitchen	42	0.91	1708	2.67	1750	2.55
	Does not have	7	0.15	1995	3.11	2002	2.91

	kitchen						
No Cooking		40	0.87	164	0.26	204	0.30
Total		4611	100	64086	100	68697	100

Source: Census of India.

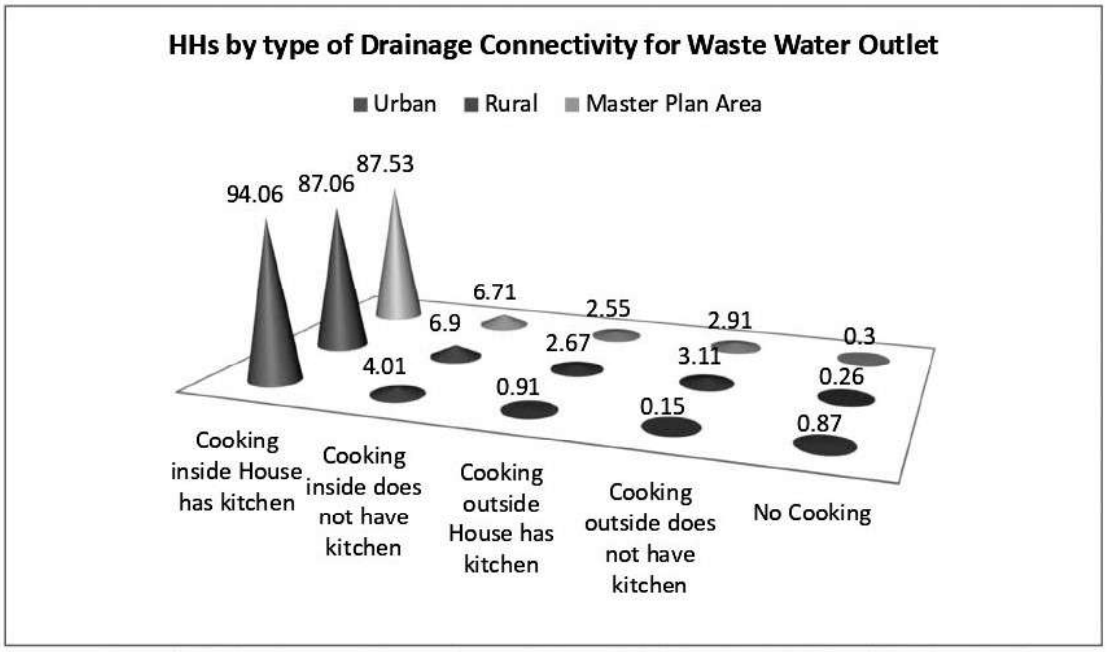


Figure 4.7: Number and Percentage of Households by Availability of Kitchen Facility

4.8. SLUMS – SQUATTERS AND INFORMAL SECTOR: -

The Slum in urban area is a common phenomenon in India. Every city has varied set of slums defined by location, community, income group and housing typologies. Generally, Slums can be identified by their informal settlement patterns. Slums are characterized by irregular clustering of small buildings, a lack of formal road networks, a high ratio of roof coverage to area, an absence of vegetation, and proximity to railways, highways, and other hazards such as steep slopes or low-lying areas which experience flooding.

Slum has not been identified till now in Sonari Master Plan Area.

4.9. HOUSING STOCK, SHORTAGE AND NEED ASSESMENT:

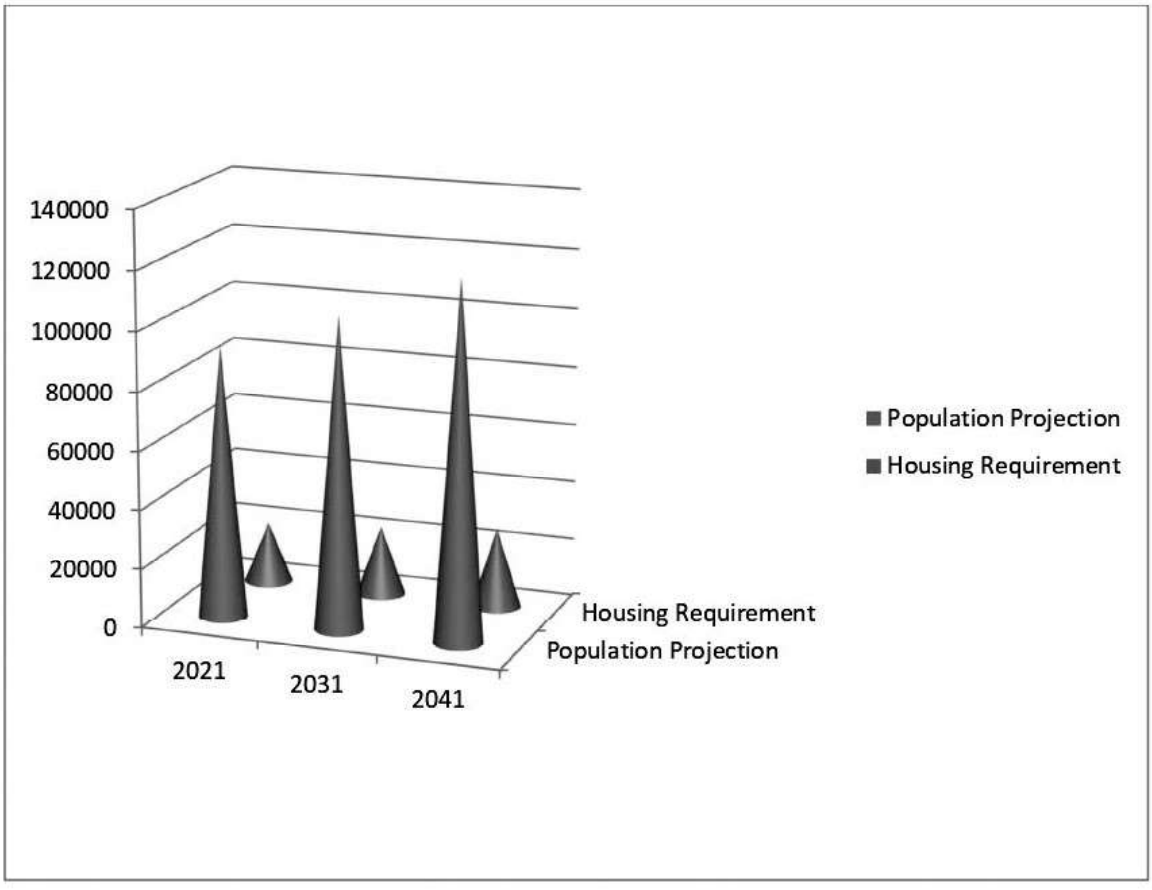
There are 1970 census houses within the Sonari Municipal Board area and 1192houses within the Sonari town (MB) area, used as residence and residence cum other usei.e., a total of 3162 census houses in urban area of Sonari Master Plan.This shows that an average of 4.5 persons occupy per house in urban area of Sonari master plan.

To find out the housing need for future a detailed study of family size, level ofobsolesce, existing shortage etc. are necessary. However, on the basis of projectedpopulation and household size of 5 persons, the gross housing needs are depicted below:

Table 4.10: Housing Requirement in Sonari Master Plan Area upto 2041

Year	Projected Population	Gross Housing Requirement
2021	92828	20628
2031	106315	23625
2041	121762	27058

Table 4.10: Population Projection and Housing Requirement inSMPA upto 2041



CHAPTER - 5
TRANSPORTATION

5.1. NETWORK OF ROADS: -

Urban road network is considered as engines of economic growth. However, the roads of Sonari urban areas are verynarrow and shoulder width is insufficientto accommodate the present trafficvolume for easy movementand there is also little scope for thewidening. Sonari is well connected with Sivasagar,Namrup,Dibrugarh,Mon district of Nagaland by road.The historic Dhodar Ali passes through the town connecting Namrup towards east, Simaluguri,Nazira,Joysagar towards west.Sonari town is located 45 km away from the historic town of Sivasagar and roughly located between Sivasagar and Namrup town.Bhoju, the nearest railway station is well connected by majorpassenger trains like intercity which are 3 km. away from the town and easily approachable.Nearest junction is Simaluguri.Distance from Dibrugarh Mohanbari airport to Sonari is about 77 km and Jorhat airport is about 80 km serves the town.Indigo,Air India regularly flies to both the airports.Most of the places of the town are easily communicable by walk and bicycle.Rickshaw and Electronic Rickshaw facilities are available within the town.

Sonari being the third gateway for the state of Nagaland.Considerable amount of goods and passenger traffic by road passes through the town destinated to various places of the region.There is an existing road network in Sonari but it lacks in form and pattern.The Mon High-way,Bhojo Sonari road and the Dhodor ali are the main transportation corridors and form an integral part of the existing circulation pattern of Sonari town.Other local roads are narrow and possessvery little scope for future expansion .

The railway station remainsalways busy and requires immediateimprovement. Moreover,road junctions in the town are nottechnically developed and it requiresimmediate technical intervention.

In this plan, emphasishas been given on the following aspects for effective transportation system in SonariMaster Plan Area.

- Optimum use of the existing transportation system through improved traffic operationand controls.

- Improvement of the existing road network through strengthening and widening.
- Provision for adequate parking facilities.
- Development of new roads and other transport facilities.

The plan recommends development of road infrastructure as per table given below:

Table 2.11: Category of Roads

Category of Roads	Name	Existing Width (m)	Recommended Width (m)
Principal Main Roads	Dhudor Ali	25	21 to 25
	Namtola Road	25	21 to 25
Main Roads	Nahor Ali	3.66	9 to 12
	Parbotipur Road	3.66	9 to 12
	Bank Road	3.05	9 to 12
	Baruah ali Road	6.4	9 to 12
	Court Road	6.1	9 to 12
	College Road No. 1	6.1	9 to 12
	P.C. Gogoi Path	3.66	9 to 12
Others Road	-		Minimum 6 and 3.65for single plot

5.2. OVERVIEW OF CRITICAL ROADS AND IMPROVEMENT: -

Sonari is well connected with the rest of the country by roads and railways. TheDhudor ali have connected Sonari with other places as shownbelow:

- Sonari to Namrup
- Sonari to Sivasagar
- Sonari toNazira
- Sonari to Dibrugarh .
- Sonari to Mon District of Nagaland via Tizit.
- Sonari to Arunachal Pradesh.

Sonari is also connected with railway network from Bhojo to Guwahati. The railwaystation of Bhojo facilitates the passengers to travel to Guwahati and alsooutside Assam. Beside train plying of taxis, buses, winger and trucks are playing a major rolein transporting passengers and goods to and from Sonari.

Sonari town has gained importance in the field of tea industry and business owing toits industrial base and existence of nearby industrial and business towns like Sivasagar,

Demow,Namrup, Nahorkotia and Dibrugarh. This has resulted in increase of vehicles on the roads of Sonaritown. On the other hand, a good number of ASTC buses, private buses and winger playthrough the town.

5.3. BUS TRANSPORT TERMINALS: -

At present both ASTC and private bus stations are located along the road sideof Dhudor Ali within the main town. These stations serve intra -urban traffic, i.e., regional traffic but create lots of traffic congestion in the area. Taxi and Auto standsare also located by the side ofthe roads.These standsare also creating congestion and obstruction to the smooth flow of traffic.

The plan proposes one Bus Stop near College Stadium. It also proposes one Bus Terminus by the side of Dhodor Ali.

5.4. FREIGHT ZONES LOGISTICS: -

Presently,there is no truck terminus at Sonari. The loading and unloading fromtrucks are carried out by the side of road.The plan proposes a Truck Terminus at Naphuk Grant besides the Dhudor Ali.

5.5. FOOTPATHS AND BICYCLE TRACKS: -

Footpaths are normally designed for pedestrian for pleasant and comfortable walking.In Sonari, there is no any footpath in other roads of the town. There is nocycle track in the town.Exclusive lane for slow moving vehicles, pedestrians along with spaces for streetvendors are also essential for overall development of a town. The hawkers and streetvendors also play an important role in urban economy. The notification of vending and novending zone by the authority is mandatory as per the provisions of the Street Vendors Act,2014. This improves the capacity of the lanes designed for motorized vehicles and increasesthe safety of slow-moving vehicles and pedestrians.

The plan suggests construction of footpath in both sides of all the roads in the townby the concerned authority. The plan also earmarks cycle tracks in the town.

The width of footpath as per URDPFI guidelines is as follows:

Table 5.2: Width of Footpath

Sl. No.	Description	Width (Mtr)
1	Minimum free walkway width in residential/mixed use areas	1.8
2	Commercial/Mixed Use Areas	2.5

The URDPFI Guidelines for cycle /NMT track is given in the following table:

Table 5.3: Cycle Track

Description	Arterial Road	Sub-arterial Road	Distributary Road	Access Road
Non Motorized Vehicle	Segregated cycle track	Segregated cycle track	Cycle lane	Mixed/traffic
location	Betweencarriageway orstreet parking and footpath on eitheredge of thecarriageway	Between carriageway orstreet parking andfootpath on eitheredge of thecarriageway	On the edge of the carriage adjacent to thefootpath orparking	Not applicable
Gradient	1:12-1:20	1:12-1:20	1:12-1:20	1:12-1:20
Lane width	2.2 to 5.0m	2.2 to 5.0m	2.2 to 5.0m	Mixed withmotorizedvehiculartraffic
Minimum width	2.5mfor a two-lanecycle track and1.9m for acommon cycletrack and footpath	2.0mfor a two-lanecycle track and1.7m for a commoncycle track andfootpath	1.5m	1m(painted)

5.6. PARKING: -

At present, there is no organized parking space for the cars, two wheelers in themarket area. The cars are generally parked on the main road of the town. The roads arealready overcrowded with traffic and further encroachment on road surface by cars andtwo wheelers has resulted obstructed traffic flow.

The plan proposes one parking area for two wheelers and four wheelers at junction point ofand Bhoju Charali and Infront of Sonari College Stadium.

The recommended equivalent car space (ECS) required for different type of vehiclesas per URDPFI guidelines are given in the following table for design of parking areas:

Table 5.4: Parking Space

Sl. No.	Vehicle Type	ECS
1	Car/Taxi	1.00
2	Two-Wheeler	0.25
3	Auto Rickshaw	0.50
4	Bicycle	0.10
5	Trucks/Buses	2.50
6	Emergency Vehicle	2.50
7	Rickshaw	0.80

5.7. AREAS WITH MAJOR TRAFFIC CONGESTION AND PARKING ISSUE, ACCIDENT PRONE AREA:

The maximum inter-town traffic volume is generated at Sunday weekly Market.There is an Accident-prone area near Bhoju Railway tini Ali.

The heavy vehicles belonging to tea industry ply daily through the town is also a cause of concern for public safety.

5.8. IMPROVEMENT OF ROTARY AND JUNCTIONS: -

The town does not have a road rotary and plan does not foresee its requirement.However, improvement of all road junctions as per IRC guidelines is urgent and important forimproving the traffic scenario.

5.9. STREET LIGHTING AND PROPOSED IMPROVEMENT PLANT: -

The town is illuminated by Sonari Municipal Board with around 200 numbersof street lights of 40 watts for the convenienceof the people. The Municipal Board is planning a project for solar light installation in thestreets covering the 16(sixteen) wards.

5.10. SIGNAGE – AVAILABILITY AND REQUIREMENT: -

The ULB, traffic & other concerned departments will assess the requirementof Signage and accordingly install the signage as per the rules and regulations for thebeautification of the town as well as smooth flow of traffic and public convenience.

5.11. MAJOR PROPOSALS: -

- One Truck terminus is proposed at Govt. landat Naphuk Grant besides Dhudor Aliand the area is earmarked in the proposed land use map.
- One over is proposed at Namtola tiniali junction.
- The authority concern may develop existing bus stand with all facilities required forcommuters.
- Considering the scenic beauty of the town, the plan recommends plantation along themajor roads and development of traffic points to augment the aesthetic beauty of thetown.
- The authority concern may take proposal to develop the Bus stop as Bus stand notified parking area. The same isshown in the proposed land use map.

CHAPTER – 6:

INFRASTRUCTURE, PUBLIC UTILITIES& SERVICES

6.1. PHYSICAL INFRASTRUCTURE: -

6.1.1. WATER SUPPLY: -

The source of water in Sonari is mainly Tube Well,shallow tube, Ponds and Supply Water through Public Health Engineering Department. Most of the household use tube well as source of water where the supply water is not available. The only sourceof water is tube well and the ring well as ground water and surface water is readily available at Sonari town and its adjoining areas. Though the tube well and ring well are efficientlyfunctioning, it will no longer be considered as free from contamination due to presence of anumber of pit latrines. A comprehensive water supply scheme with treatment plant coveringthe population up to 2041 is the need of the hour.

The objective of a public protected water supply system is to supply safe and cleanwater in adequate quantity, conveniently and as economically as possible. Rising demand ofwater due to rapid urbanization is putting enormous stress while planning the water supplysystem for an area; it is evident to consider water conservation aspects, which may bepossible through optimal use of available water resources, prevention and control of waterand effective demand management.

As per URDPFI guidelines the norms for water requirement for institutional buildingsare given below: -

Table 2.15: Requirement for Institutional Buildings

Sl. No.	Institutions	Litres per head per day
1	Hospitals (including Laundry)	-
	a) No. of beds exceeding 100	450 (per bed)

	b) No. of beds not exceeding 100	350 (per bed)
2	Hotels	180 (per bed)
3	Hostels	135
4	Boarding Schools	135
5	Restaurants	70 (per seat)
6	Day School/Colleges	45
7	Offices	45
8	Cinema, Concert Halls and Theatre	45

In addition to the above the fire- fighting water demand is also as a function ofpopulation. It is desirable that one- third of fire-fighting requirements from part of the servicestorage. The balance requirement may be distributed to several state tanks of strategicpoints. These strategic points may be filled from nearby pond streams or cannels by watertankers wherever feasible.

6.1.2. DRAINAGE SYSTEM:

The drainage system at Sonari town is not so good compared to nearby towns.There are natural channels in the both sides of town connecting theTeok River. But due to the poor drainage and sewerage system in Sonari,creats the problem of flood in low lying area during rainy season also low-lying of Dhudor ali , which passes through the middle of the town, the existing drainsare not capable of draining the surface run off out completely and as a result water logging has become a regular feature during the rainy season.The beds of the drains have become shallow resulting in the crippling of their capacity to discharge drain waters effectively. Even in the winter too, this disability causes water logging on the drains thereby giving chances for rise of mosquitoes and flies. A contour survey can be carried out to study the existing drainage condition of the town.

6.1.3. SANITAION: -

In Sonari Master Plan area more than 50% household used septic tank.The percentage of household who used septic tank is almost double in urban area then in rural area.In the Master plan area still,people use open pit or other means which arenot conducive for health and environment atmosphere.So, this plan suggests authorityconcern to take step for such type of practices and also take measures under somescheme or providing financial assistance to construct septic tank in their household orauthority concern to take steps for the construction of public toilet/sewerage system. These measures will helpto reduce the hazardous atmosphere in urban areas as well as in rural areas. The number and percentage of households by type of latrine facility in SMPA are shown below:

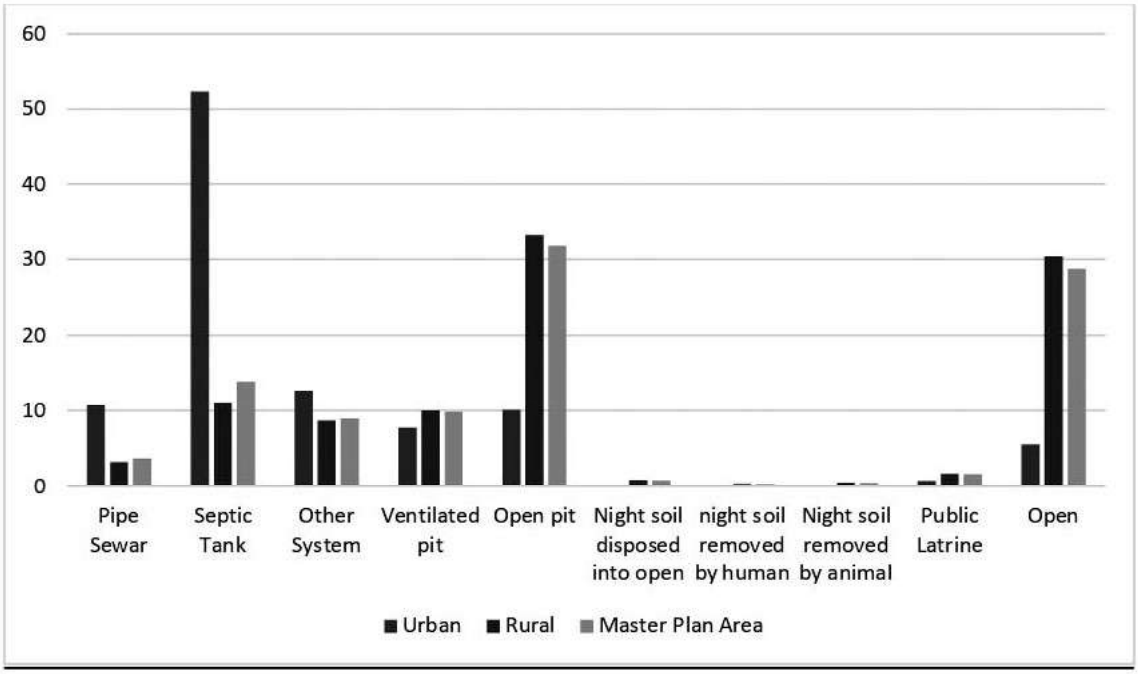
Table 6.1.4 Number and Percentage of Household by Type of Latrine Facility

Type of Latrine Facility	Urban Area		Rural Area		Master Plan Area	
	No. of Households	Percentage (%)	No. of Households	Percentage (%)	No. of Households	Percentage (%)
Pipe Sewer	497	10.78	2042	3.19	2539	3.70

System						
Septic Tank	2411	52.29	7124	11.12	9535	13.88
Other System	585	12.69	5568	8.69	6153	8.96
Ventilated pit	359	7.79	6413	10.01	6772	9.86
Open pit	466	10.11	21382	33.36	21848	31.80
Night Soil Disposed into open Drain	1	0.02	522	0.81	523	0.76
Night Soil removed by human	0	0.00	191	0.30	191	0.28
Night Soil removed by animal	2	0.04	288	0.45	290	0.42
Public Latrine	33	0.72	1070	1.67	1103	1.61
Open	257	5.57	19486	30.41	19743	28.74
Total	4611	100.00	64086	100.00	68697	100.00

Source: Census of India.

Figure 6.1.4.: Household by Type of Latrine Facility (%)



The general standard for public toilets in public area and modified norms for public toilets inpublic places and roads recommended in URDPFI guideline are given below: -

Table 6.1.5: Norms for Public Toilets in Public Areas

Type	Norms for Toilets
Public Toilet	On road and for open areas every 1 km including parks, open air theatre, car parksand fuel station. Toilets shall be disabledfriendly and in 50: 50 ratios (M / F).
Signage	Signboards on main streets shall givedirections and mention the distance to reach the nearest public convenience of visitors. Helpline number shall be pasted on all toilets for complaints / queries.
Modes	Pay and use or free in pay and use toiletsentry is allowed on payment to the attendant.
Maintenance / Cleaning	The toilets have both men and womenattendants. Alternatively automatic cleaningcycle covering flush, toilet bowl, seat, hand Wash basin, disinfecting of floor andcomplete drying after each use can beadopted. Public toilets shall be open 24 hrs.

The urban local body can follow the above norms for construction of public toilet andmaintenance thereafter.

6.1.6. SEWARAGE NETWORK: -

Like the rest of the towns of the state, Sonari also does not have seweragenetwork and treatment plant. Human night soil is generally disposed at conventional septictanks or low-cost sanitary pits. Till the execution of the sewerage scheme, it is recommendedto encourage the people to construct sanitary latrines of their own and to cover poorfamilies under Swaachha Bharat Mission. The use of service latrine should be banned as perlaw for the health and hygiene of the community.It is also suggested that,concern development should initiate action to implement sewerage system for Sonari town.

6.1.7. SOLID WASTE MANAGEMENT – CURRENT SITE ASSESSMENT, LAND OWNERSHIP, PROPOSED SITE: -

The collection and disposal of solid waste in Sonari is done by Sonari Municipal Board. Sonari Municipal Board has provided dustbins in some specified locations for collection of solid waste from the households. With the help of garbage van the collected waste is damped in the specified open dumping ground in every morning. A garbage disposal site and solid waste management site has been proposed at Rajabari Grant.

6.1.8. ELECTRIC SUB-STATION AND MAJOR TRANSFORMERS: -

Power requirement of Sonari Master Plan Area is met by the ASEB grid. Around 75% of the total population in the Town have electric connection. Sonari is also facing the problem of acute scarcity of electric power like theother towns of the state. In peak hours load shedding for one or two hours is a way of life for its residents. Since the consumption is increasing at a fast rate, the department concernedfails to cater to the needs of the people causing load shedding a bitter experience. Theauthority concern provides around 200numbers Tube lights/CFLs of 40 Watts in the street of Sonaritown for the benefit of the people.There is one electric sub-station at Sonari Town.

6.1.9. SOCIAL INFRASTRUCTURE: -

6.2.1. SCHOOLS, COLLEGES AND UNIVERSITIES: -

The progress and development ofa place is closely related to expansionand development of education.There are many good educational institutions in the town, catering the needs of many nearby villages and tea-gardens.Sonari is known for its eminent scholars. Schools provide education both Assamese and English Medium.Most of the schools follow syllabus of Secondary Education Board of Assam,others follows Central Board of Secondary Education(CBSE).For higher secondary (10+2) both schools follow syllabus of Assam Higher Secondary Education Council(AHSEC).Some of them are The Rajadhap LP School,The Rajadhap ME School,BPBM Higher Secondary School,PKB Girls HS School,Chah Mazdoor Vidya Niketon,Polester Academy,Sonari Junior College,Polestar Academy,Shankaedev Sishu Vidyab Niketon,Sonari Town High School,Shankardev Shishu Vidya Niketon,Sonari Jatiya Bidya laya,Shantipur LP School,Polestar Academy,Sonari Jatiya Bidyalaya etc , which are a host of brilliant students who are now placed across various reputed organisations/companies in India and abroad. The St Joseph's Higher Secondary School is one of the major institutes in Sonari boosting education in this locality. The Sonari College,The Sonari Junior College,The Sonari Commerce College,Junior College are some of the other major institutes of Higher Education of the locality. The Sonari Hindi High School is a Hindi-medium school. The nearest University is the Dibrugarh University.

URDPFI guidelines for educational facilities are given below:

Table 6.4: Norms for Pre-Primary Nursery school to Higher education

Sl. No	Category	Student Strength	Population served per unit	Area Requirement	Other Controls
1	Pre- Primary Nursery School	-	2500	0.08 Ha.	To be located near park
2	Primary School (Class I to V)	500	5000	Area per School = 0.40 Ha. A) School building area = 0.20 Ha. B) Play field area = 0.20 Ha.	Playfield area with a minimumof 18 m X 36 mto be ensuredon effectiveplay.
3	Senior Secondary School (VI to XII)	1000	7500	Area per School = 1.80 Ha. A) School building area = 0.60Ha.	Playfield area with a minimumof

				B) Play field area = 1.00 Ha. C) Parking area = 0.20 Ha.	68 m X 126m to beensured oneffective play.
4	Integrated School without hostel facility (Class I to XII)	1500	90000 To 1 Lakh	Area per School = 3.50 Ha. A) School building area = 0.70 Ha. B) Play field area = 2.50 Ha. C) Parking area = 0.30 Ha.	To be located near a sport facility
5	Integrated School with hostel facility (Class I to XII)	1500	90000 to 1 Lakh	Area per School = 3.90 Ha. A) School building area = 0.70 Ha. B) Play field area = 2.50 Ha. C) Parking area = 0.30 Ha. D) Residential area = 0.40Ha.	To be located near a sport facility
6	School for Physically Challenged	400	45000	Area per School = 0.70 Ha. A) School building area = 0.20Ha. B) Play field area = 0.30 Ha. C) Parking area = 0.20 Ha.	To be located near park or sport facilities
7	College	1000 To 1500	1.25 Lakhs	Area per School = 5.00 Ha. A) School building area = 1.80Ha. B) Playfield area = 2.50 Ha. C) Parking area = 0.30 Ha. D) Residential area = 0.30 Ha.	

From the survey it has been found that the area most of the education institutionsare not sufficient asper URDPFI guidelines and there are no adequate playfields and parking facilities.

So, this plan suggests to take measures by the education department as well as privateinstitution to increase the area of primary school upto 0.40 Hectare including playfield area, for High& Higher Secondary School upto 1.80 Hectare including playfield and parking areand for the intermediate school upto 3.50 hectare including playfield, parking facility andhostel facility as per URDPFI guideline.

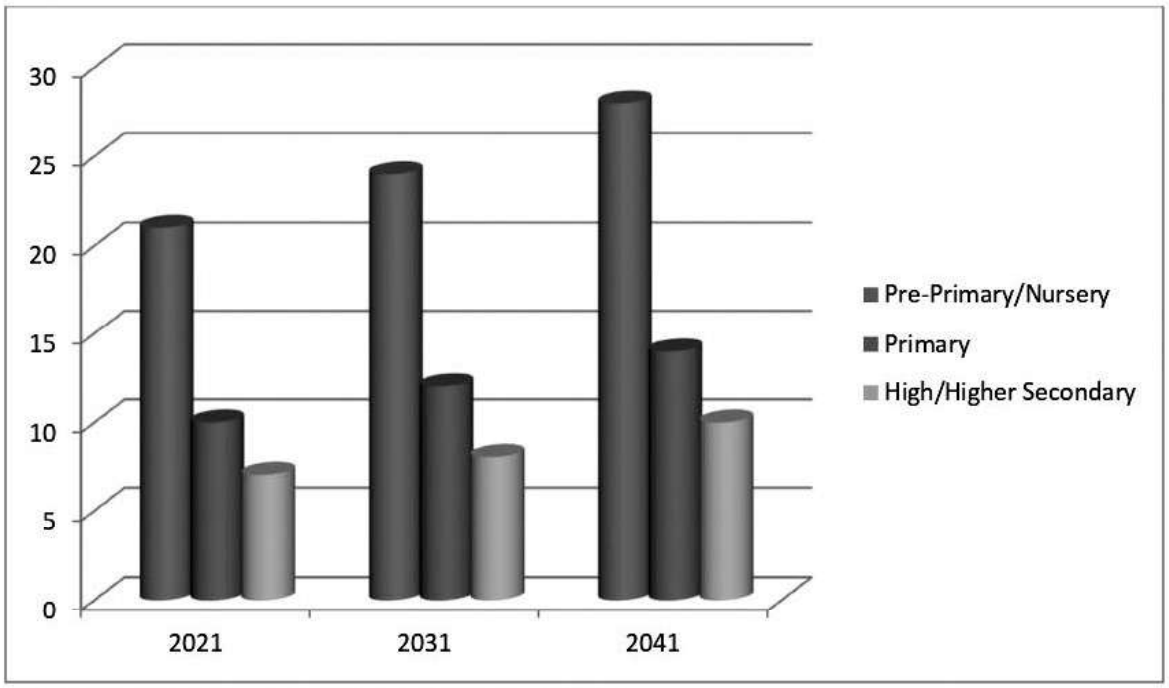
This plan also suggests for the provision of school for physically challenged child /persons in an area of about 0.70 hectare for the enrolment capacity of 400 with adequateplayfield and parking facility by the education department or by any NGO associated with social upliftment of the region.

The table below shows the number of students and additional school required in Sonari Revised Master Plan Area during 2022-2042.

Table 6.5: Additional School Requirement in Sonari Master Plan Area

Year	Projected Population	Additional School Required		
		Pre-Primary/ Nursery Student strength-500 Population served per unit-2500	**Primary** Student strength-500 Population served per unit-5000	**High/Higher Secondary School** Student strength-1000 Population served per unit-7500
2021	92828	21	10	7
2031	106315	24	12	8
2041	121762	28	14	10

Figure 6.5: Additional School Requirement in Sonari Master Plan Area



Source: Estimated by Town & Country Planning, Sivasagar

The shortage of schools in the plan area, to some extent has been fulfilled by theprivate institutions at present and it is also hoped that in the future, private institutions will playan important role to mitigate the shortage of primary schools as well as High andHigher Secondary schools.

6.2.2. HIERARCHY OF HOSPITALS AND HEALTH CENTRES: -

Sonari is little under developed regarding health services. In Spite of patient flow from nearby state Nagaland, only a handful doctors are available for the service.Any serious cases the patients are referred to Assam Medical College,Dibrugarh or Jorhat Medical College,Jorhat.In Sonari town,there are Sonari Town Hospital,Sonari Civil Hospital,Chanakya Medical, Sonari State Vety.Hospital,Rajaphukhuri Hospital,Teok Gardenetc are located in Sonari. Besides, there are PrimaryHealth Centres, Secondary Health Centres and Sub Centres inspecified places of SonariMaster Plan Area. In spite of that, considering the population growth ingreater Sonari area, medicalfacilities at present are not adequate, as a result large no. of patients rush to Dibrugarh and Jorhat forbetter treatment.But at present,there is a construction of one Medical College in Charaideo Distric is under construction which will be solve the problems of serious health issues nearby towns of Charaideo district.

URDPFI guidelines for health care facilities:

In the health care facilities the size of a hospital depends upon the hospital bedrequirement, which in turns is a function of the size of the population it serves. As perURDPFI guideline the calculation of number of beds is based on:-

a) Annual rate of admission as 1 per 50 populations
b) Average length of stay in a hospital as 5 days

Since the projected population for Sonari Master Plan upto the year 2041 is 121762, as such, the number of beds required for the said population is:-

i) No. of beds days per year = (121762X 1/50) X 5 = 12176

ii) No. of beds required with 100% Occupancy = 12176/365 = 33

The classification of healthcare facilities as URDPFI guideline is given in the following table:-

Table 6.6: Health Care Facilities

Sl. No.	Category	No. of Beds	Populationserved per unit	Area Requirement
1	Dispensary	-	15000	0.08 to0.12 Ha
2	Nursing Home, Child Welfare & Maternity Centre	25 to 30	45000 to 1.00 Lakh	0.20 to 0.30 Ha
3	Polyclinic	Some observation bed	1.00 Lakh	0.20 to 0.30 Ha
4	Intermediate Hospital	200 Initiallytheprovisionmay befor100 bedsincludingmaternitybeds	1.00 Lakh	Total Area = 3.7 Ha. i) Area for hospital = 2.70 Ha. ii) Area for Residential Accommodation = 1.00 Ha.
5	Family Welfare Centre	As per requirement	50,000	Total Area = 500 Sqm to 800 Sqm
6	Diagnostic Centre	As per requirement	50,000	Total Area = 500 Sqm to 800 Sqm
7	Rehabilitation Centre	-	-	As per requirement

This plan suggests to take appropriate measures by the health department for the provision of 5 nos. of dispensaries at various location within the Master Plan Area coveringan area of 0.08 – 0.12 hectare per dispensary serving at least 15,000 persons. This plan also suggests to upgrade the existing civil hospital upto 200 beds with allmodern healthcare equipment or serving at least 1(One) Lakh population. This plan also suggests toset-up a family welfare centre to serve at least 50000 persons by the health department and also a Rehabilitation centre by the Govt. or by any NGO for the upliftment of deprived classof the community.

6.2.3. PARKS AND RECREATION SPACES: -

Sonari Master Plan Area has only 0.19 sqkm of land for recreational facilities.There is also a library near Sonari College as well as in the middle of the town.There is also a park around a historic Ahom Kingdom's tank called Borpukhuri.There is also a DC Court at Rajadhap.Religious places of worship like Sarbojanin Namghar,Gurudwara Sahib,Hari Mandir,Kali Mandir Shiv Mandir,Shanti Mandir,Mosque,Buddha Mandir etc giving a truly secular and cosmopolitan feeling.In addition to this, numerous vacant plots of land serve as play grounds. But now these are occupied bynewly constructed badges leading to shortage of open spaces in the planned area.

CHAPTER – 7:

ENVIRONMENT AND CITY BEAUTIFICATION PLAN

7.1. DESCRIPTION OF ECO-FRIENDLY AREAS: -

The Historic Dhudor Ali is passing through the Sonari town.There are several tea gardens in and around the Sonari MasterPlan Area.There is a Gymkhana club golf course built sometime around 1945.This golf course was created by the tea planters.This golf course is 1.5 km away from the Sonari gymkhana and as a whole about 5 km away from the centre of the Sonari town.There are dramatic changes in elevation on this course which make it more interesting. The course is a part of the Naphuk Tea Estate.Besides,there are parks and playgrounds in the Master Plan Area.

7.2. PLAN/MEASURES FOR PROTECTION AND CONSERVATION OF ENVIRONMENTALLY –FRIENDLY ZONES: -

Being environmentally friendly simply means having a lifestyle that is better for theenvironment. It's all about taking small steps towards mother earth so as to make this planeta better place for our communities and generations to come. A good way would be to startwith conserving water, driving less, walking more, consuming less energy, buying recycledproducts, eating locally grown vegetables, joining environmental groups to combat airpollution, producing less waste, planting more trees and many more. The more that we do onour part the faster we will create an environment of living that promotes sustainability.

In the environmentally friendly zone, there is more than just a good recyclingprogrammed in place. People of the town who are committed to conservation andpreservation of resources should encourage options like community play grounds, publictransportation, green construction and work to change the way that fossil fuels and otherresources are used to support community services.

This plan suggests following proposals for protection and conservation ofenvironmentally friendly zones: -

- People of Sonari Town should join hand with environmental groups toprotect the town and make the environment clean and green.
- Reduce, reuse, recycle waste hierarchy is the order of priority of actions to betaken to reduce the amount of waste generated and to improve overall wastemanagement processes and programs.
- Plantation habit should be grown up among the people. For this necessaryawareness camp should be organized by competent authority for conservationof natural resources and composting system.
- Steps should be taken by the authority to stop people from littering on roads.Instead, educate them to put trash and garbage in dustbins. The pile ofgarbage on road hampers the beauty of the city and also pollutes the air.

7.2.1. NO CONSTRUCTION ZONE

For maintaining river Ecosystem/Ecology and better environment of the town, No Construction Zone is demarcated along with the both bank of rivers. In the Urban Area up to 20 metres and in the rural area up to 50 metres there will be No Construction Zone from the bank of the river.

7.3. CITY BEAUTIFICATION PLAN/ PROPOSALS: -

To improve town's appearance and aesthetic view, neighbourhoods often try to update what is known as streetscape, which pertains to the area between the driving lanes and the edge of the private property. Partly this is a popular strategy because it is public space and it's easy for the government to dictate what will happen there. In truth, streetscape can be quite effective in uniting block faces or a series of blocks that are discordant in some way, because streetscape often includes plantings, the effect is to soften the view created by streets and hopefully sidewalks. Care in the choice of materials and in the quality of the installation makes all the difference in this form of beautification.

In addition to streetscape, sometimes we need a focal point. This might be public art and open-air theatre, fountains, a clock tower or grouping of tall grasses. It we already have a lonely statue or old historical building with nothing around it, maybe we should add planting beds of considerable size, an inviting bench or two, and may be an interpretive sign explaining the rest of the store". A tree planting project, either on a vacant plot,in a park, or in the parkway between the side walk and the street is great for improving Town's appearance over the course of a few years at a relatively low cost. Voluntary schemes should be taken up by neighbourhood basis for cleaning up the park of the Town. Project should also be taken up for cleaning the river or stream. Letter collects on the banks and then ultimately in the water, especially when no trash cans are provided.

7.4. ROADSIDE PLANTATION: -

The main object of road side plantation is to provide protection to road, traffic, check soil erosion, food, fuel, fodder and timber to the society and mitigate climate change issues. Plantation is durable assets that produce fruits and raw-materials for Argo based industry, and also generate livelihood after 7to 10 years.

This plan suggests the social forestry department to prepare project on road side plantation with details of road to be covered, length of road and species of plants to be planned with numbers of plants for entire Sonari Master Plan area.

Plantation of fruit bearing plants, suitable to local Argo-climatic condition should be done in every area of the Master plan. The authority concern should take steps for organizing camp and awareness program for road side plantation and educate the people about the benefits of road side plantation including its impact on city's landscape.

7.5. URBAN AGRICULTURE AND URBAN FORESTRY: -

Urban Agriculture is the new culture that is catching up in emerging cities. Since the population growth rate is very high, natural resource to feed the increasing population in coming days is going to be a difficult task. So, urban agriculture is seen as a big solution to the problem.

Urban forestry is the careful care and management of tree in urban settings for the purpose of improving the urban environment. Urban forestry advocates the role of trees as a critical part of the urban infrastructure. Urban forest functions are thus often oriented toward human outcomes, Such as shade, beauty and privacy. Urban forests bring many environmental and economic benefits to town. Among these are energy benefits in the form of reduced air conditioning, reduced heating by shading buildings, homes and roads, absorbing sunlight, reducing ultraviolet light, cooling the air and reducing wind speed.

So, urban forestry scheme should be taken by competent authority for afforesting degraded forest land in the Sonari Revised Master Plan Area. This type of scheme will act against climate change by creating a carbon sink and against air population in the town. This plan also suggests for starting tree surveys in the town which can be conducted by NGO and college or school students. A plan should be framed to create small nurseries in Govt. school as well as in private institution where there is extra space.

7.6. PUBLIC RAIN WATER HARVESTING SCHEME: -

Rainwater harvesting is a process involving collection and storage of rain water that runs off natural or man-made catchment areas, e.g., roof top, Compounds, rock surface or hill slopes or artificial repaired impervious/semi-pervious land surface.

Due to deforestation and the consequent ecological imbalance, the ground water level is going down day by day. The constant rising demand of water supply especially from the urban areas does not match with the surface water sources, as a result of which the water reserves beneath the ground level are over exploited. This consequently results in the water level depletion.

Water harvesting apart from recharging the ground water level, increases the availability of water at a given place at a given point of time. It also reduces the power consumption. It further reduces the run off which chokes the storm water drains artificial flooding, chances of soil erosion and improves the quality of water. The plan suggests rain water harvesting scheme to be implement by a competent authority. Moreover, the urbanization trend reduces the infiltration rate of rain water into the sub-soil thereby reduces ground water recharging.

7.7. DEVELOPMENT OF PARKS AND RECREATION SPACES: -

The Plan recommends 0.48 sq.km of land for recreational purposes. The land earmarked for parks and recreation is not sufficient for the increasing population. This plan is not in a position to increase the land for parks and recreation as required for the proposed population due to non-availability of Government land in the plan area. The plan envisages a Town hall to meet the social and cultural needs of the town and also recommends modernizing the existing play ground with adequate infrastructure.

7.7.1. URDPFI GUIDELINE FOR PARKS AND RECREATION SPACES: -

The provision of socio- cultural facilities shall correspond to the changing urban demography and work life style.

Table 7.1: Norms for Socio-Cultural Facilities

SL. No.	Category	Population Served Per Unit	Land Area Requirement
1	Anganwadi – Housing Area/Cluster	5000	200-300 Sqm
2	Community Room	5000	750 Sqm (NBC)
3	Community Hall/Marriage Hall/Library	15000	2000 Sqm
4	Music, Dance and Drama Centre	100000	1000 Sqm

Table 7.2: Norms for Recreational Facilities

SL. No.	Category	Population Served Per Unit	Land Area Requirement
1	Housing Area Park	5000	0.50 Ha
2	Neighbourhood Park	15000	1.00 Ha
3	Community Park	100000	5.00 Ha

Table 7.3: Norms for Sports Facilities

SL. No.	Category	Population Served Per Unit	Land Area Requirement
1	Residential Unit Play Area	5000	5000 Sqm
2	Neighbourhood Play Area	15000	1.50 Ha
3	District Sports Centre	100000	8.00 Ha

7.8. BEAUTIFICATION OF MAJOR TRANSIT ZONE: -

Sonari has emerged as a major transit zone for Tea. The Tea of Sonari region transit to all over India. So, it is very much essential to beautify and upgrade the major traffic points like bus stand, Railway station and market area of this emerging transit zone of upper Assam.

7.9. ROADSIGNAL AND STREET FURNITURE: -

Road signals are signs erected at the side of or above roads to give instruction or provide information to road uses. The earliest signs were simple wooden or some milestones. But in course of time, many states of India have been adopting pictorial signs or otherwise simplified and standardized their signs to overcome language barriers and enhance traffic safety, such pictorial signs use symbols in place of words.

Street furniture is a collective term for objects and pieces of equipment installed on streets and roads for various purposes. It included Benches, traffic barriers, bollards post boxes phone boxes, street lamps, traffic lights, traffic signs, bus stops, taxi stand, public lavatories fountains, public sculptures and waste receptacles an important consideration in the design of street furniture is how it affects road safety.

In Sonari Master Plan Area existing road signs and furniture are inadequate for increasing traffic and those are not also scientifically designed. So, the plan suggests to authority concern to take steps for the installation of warning, priority, prohibitory, mandatory, information, facilities, service, direction, position and indication signs in the roads of Sonari town, so that local people as well as outsiders can be benefitted and road safety can be maintained.

In Sonari Master Plan area presently there is no street furniture necessary for the public. The concern authority should take steps for the construction of public lavatories at important public places and installation of benches in the park and public places, post boxes, bus stop, taxi stand, waste collectors etc.

This plan recommends for preparation and execution of a city beautification plan covering street light, traffic signal etc. that will enhance the beauty of this resourceful town.

CHAPTER – 8:

LAND USE PLAN

8.1. DEVELOPABLE AND NON – DEVELOPABLE AREA OF THE MASTER PLAN: -

Urban growth and development are often conditioned by the natural landscape like hills,water bodies, forests and manmade impediments like railway line, major roads, river, canalsetc. It is also conditioned by the resources and technology employed in overcoming thegrowth impediments and constraints.

Proposed RevisedSonari Master Plan covers an area of 102.033 sqkm (10203.3hectare).Except the Dhudhor Ali ,passing through the middle of the Town, no other physical features areconstrains for development. The soil is very fertile and good vegetation is observed in the region.

The quality of urban life and its functional efficiencies are governed by its land-usepattern. In order to understand and analyse systematically the functional relationshipbetween various uses particularly the place of working, living and recreation, a detailed landuse survey was conducted during 2019 to 2022 and is analyzed up to 2042 to estimate the present and future need of the Town. The present Sonari Municipal Board covers an area of8.00 sqkm (800 hectare), while the Proposed Revised Master Plan covers an area of 102.033sqkm (10203.3 hectare).

EXISTING LAND USE FOR REVISED MASTER PLAN FOR SONARI.

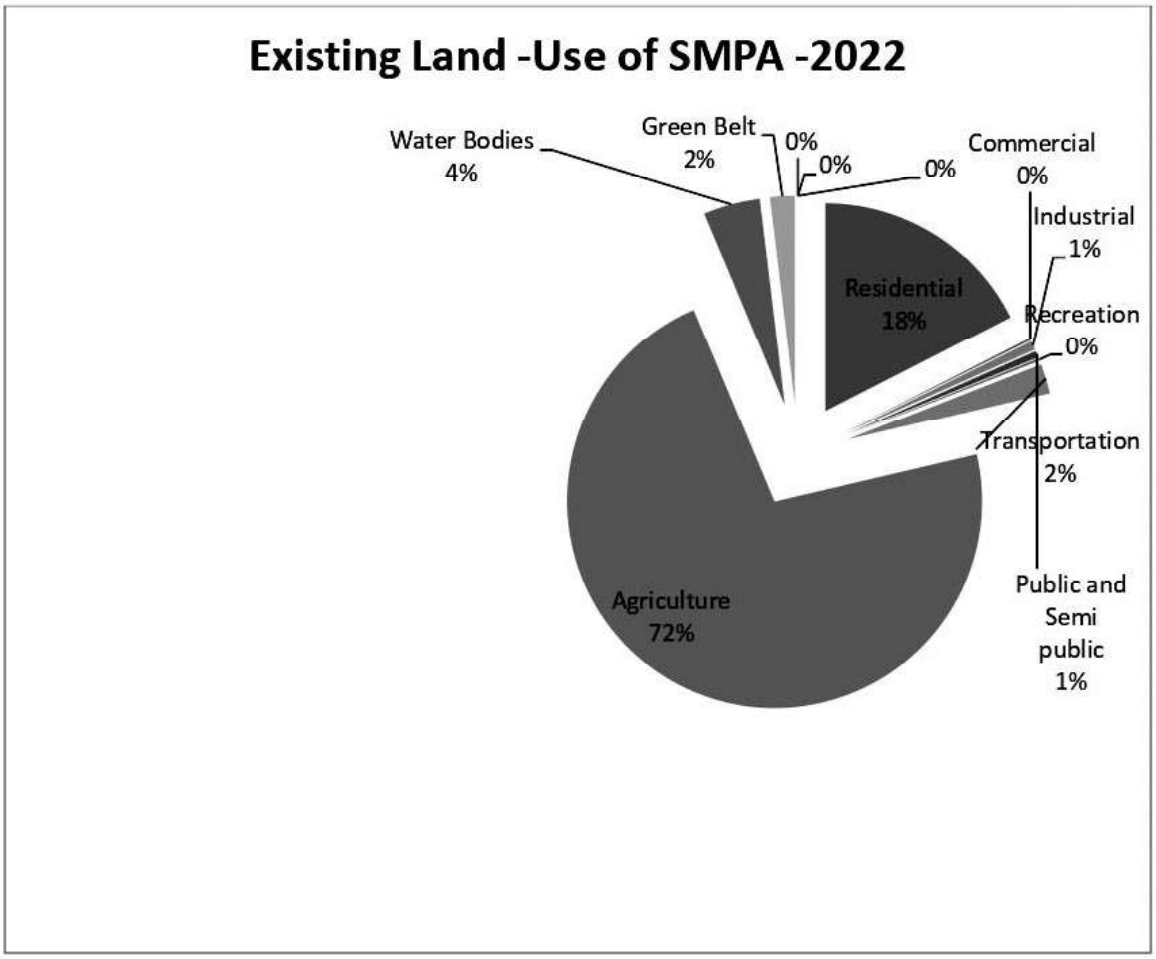
The existing various uses of land and the areas occupied by each use in Sonari Master Plan Area has been shown in the following table:

Table 8.1: Existing Land-Use of SMPA - 2022

Sl. No.	Categories	SONARI Master Plan Area in sqkm	Percentage of Sonari Master Plan Area (%)	Percentage of Developed Area (%)
A.	**DEVELOPED AREA**			
1	Residential	17.91	17.55	82.11
2	Commercial	0.15	0.15	0.69
3	Industrial	0.69	0.68	3.16
4	Public and Semi public	0.53	0.52	2.43
5	Recreation	0.19	0.19	0.87
6	Transportation and communication	2.34	2.29	10.74
	Total	**21.81**	**21.38**	100
B.	**UNDEVELOPED AREA**			
7	Agriculture	73.65	72.18	
8	Green Belt	1.97	1.93	
9	Water Body	4.60	4.51	
	Total	**80.22**	**100.00**	
	TOTAL MASTER PLAN AREA	**102.03**		

Source: Town & Country Planning, Sivasagar Land Use Survey 2020.

Figure 8.1: Existing Land-Use of SMPA - 2022



Land use planning has a bearing on the expansion of the Town and put pressure onrural areas. A change in urban economic function causes changes in population. Thedecision to locate administrative block, commercial activities and industrial estates in urbanareas stimulates general economic development and accounts for population growthresulting in opportunities for employment, increased income and business opportunities.

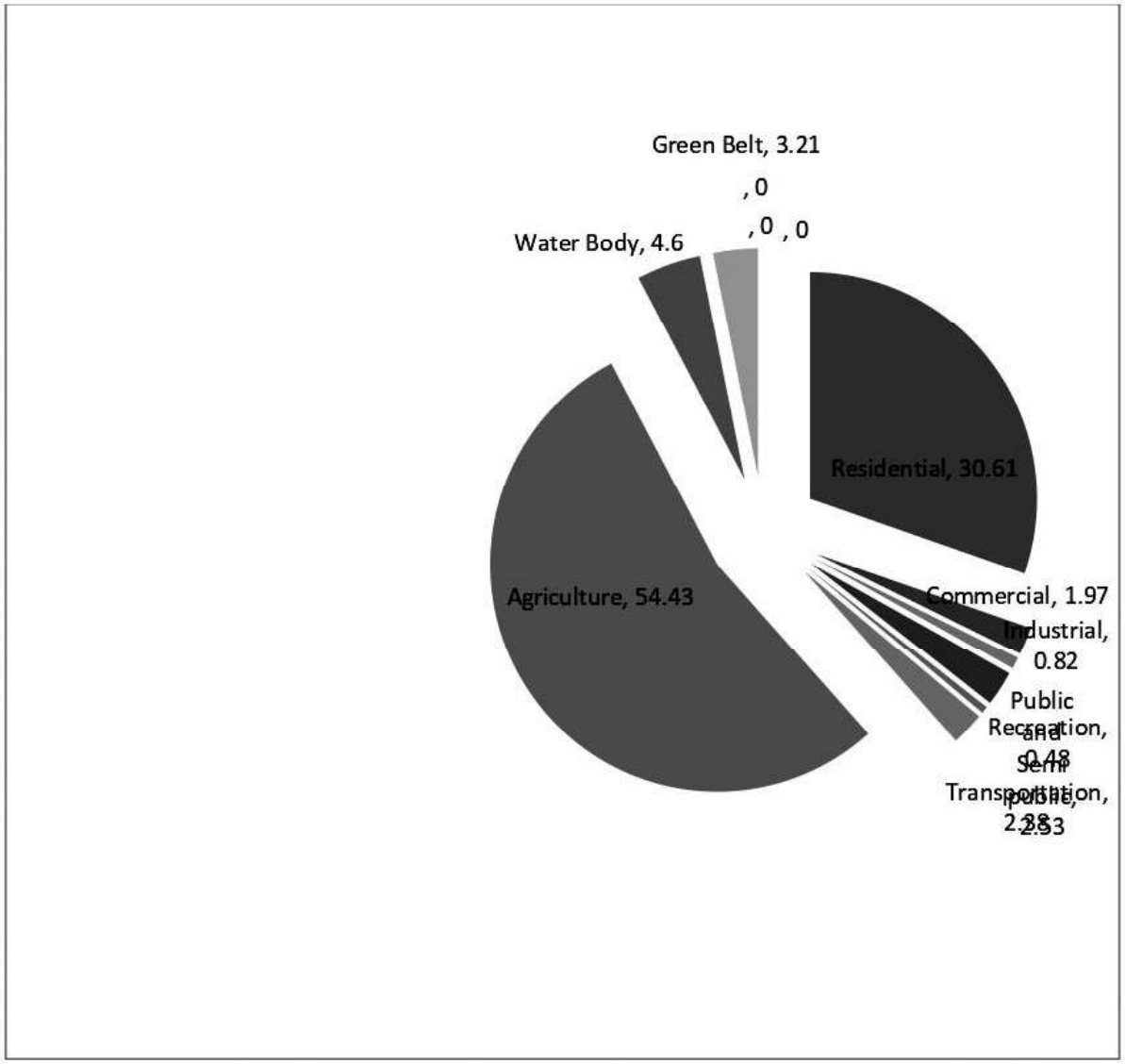
The following table shows the proposed distribution of land uses in Revised Final Master Plan Sonarifor Master PlanArea 2022-2042.

Table 8.2: Proposed Land-Use of Revised Sonari Master Plan Area 2042

Sl. No.	Categories	Sonari Master Plan Area in sqkm	Percentage of Sonari Master Plan Area (%)	Percentage of Developed Area (%)
A.	DEVELOPED AREA			

1	Residential	30.61	30.00	76.93
2	Commercial	1.97	1.93	4.95
3	Industrial	1.82	1.78	4.57
4	Public and Semi public	2.53	2.48	6.36
5	Recreation	0.48	0.47	1.21
6	Transportation and communication	2.38	2.33	5.98
	Total	**39.79**	**38.99**	100.00
B.	**UNDEVELOPED AREA**			
7	Agriculture	54.43	53.35	
8	Green Belt	3.21	3.15	
9	Water Body	4.60	4.51	
	Total	**62.24**	**61.01**	
	TOTAL MASTER PLAN AREA	**102.03**	**100.00**	

Figure 8.2: Proposed Land-Use for Revised SMPA upto 2042



8.3. COMPOSITE ZONES OR MIXED ZONES: -

With rapid urbanization and growth of urban population the demand for housing andmarket complex has increased manifold. The main item of development in the area will be development of well-planned roads,drains, provision of external electrification, water supply and a site for community centre witha park and a neighbourhood shopping centre.

It is proposed to develop 0.17 hectare of land for local shopping centre, 0.32 hectare for development of a park and for neighbourhood community centre and 1'59 hectare of land for road network and roadside drain.

CHAPTER – 9:

PROPOSED PROJECT, BRIEF AND TENTATIVE FUNDING SOURCE

9.1. IDENTIFY PRIORITY SECTORS AND PROJECTS: -

The plan proposals for Sonari Master Plan Area spread up to 2042. It is quite obviousthat the natural development will continue and the private developers will play an importantrole in this respect. As such, the private development is encouraged in conformity with theMaster Plan. It is strongly recommended to stop unplanned and sporadic developments butto encourage balance planned and sustainable development where the provision fornecessary physical infrastructure and socio-economic amenities are economically madepossible. There are some immediate necessities as pointed out by the various stake holders,which are to be taken up as priority schemes for the Master Plan Area which is listed below:

- Widening and improvement of roads, with street lights and demarcation of notifiedparking area.
- Improvement of existing Sonari Daily marketand others near Sonari Municipal Board office and near Sonari tank in Sonari town into a well-planned, people friendly business hub.
- Construction of a Tourist lodge and a Marriage Hall.
- Construction of a Town Hall & old age home.
- Construction of Slaughter house.
- Improvement of existing traffic signal points and setting up new ones.
- Setting up of Organic farming industry.
- Setting up of Micro Small and Medium Enterprises. (MSME)
- Improvement of existing A.S.T.C. Bus station.
- Construction of Vendor and Hawker market.
- Construction of public bus stand and truck stand.
- Construction of Auditorium.
- Improvement of existing hospital and dispensaries.
- Construction of cold storage, ware house etc.
- Development and Construction of playground and Indoor stadium.
- System of regular collection and disposal of garbage in the master plan area by theconcerned authority.
- Scheme for Solid waste Management system as per waste management Rule,2016.
- Preparation and execution of a comprehensive drainage scheme.
- Execution of independent Residential Land Development.
- Water supply scheme
- Proposal for fuel filling station and LPG go down.

Necessary schemes for development of land and to provide necessaryincentive to attract industrial enterprises in the areas earmarked for industries at Teak Gaon.

In the first phase, the schemes like widening and improvement of roads, constructionof new roads, provision for requiredspaces for parks, playgrounds and parking places and improvement of commercial andmarket areas including existing market, daily bazaar etc. can be taken up. The Town Committee has to play an important role in liaison with other Govt. agencies informulation and execution of such schemes in the Master Plan Area.All the above schemes need to be carried out to make the plan area in to healthy place of living.

In addition to the above, the plan also recommends for the establishment of Healthcentre, construction of fly-over, construction of administrative block housing and Govt.offices under one roof.

9.2. FUND REQUIREMENT FOR EACH SECTOR/ PROJECT: -

Fund requirement for each sector project will be finalized by the ULB & concerned linedepartment after preparation of detailed project report as per Govt. instruction.

9.3. IDENTIFY LAND SITE FOR PROPOSAL: -

The plan finds the following sites are suitable for taking up the proposals in accordance with the existing trends of growth as well as for balanced development:

- One Bus Stop nearCollege Stadium.
- One Truck Terminus at Naphuk Grant besides Dhudor Ali.
- One parking area for two wheelers and four wheelers at Bhoju Charali and at Nahor Ali.
- Water Supply Scheme: -at ward no 14
- Solid Waste Management System: -At Rajabari Grant.
- Affordable Housing Scheme: - At ward no. 16.
- Light and Medium industrial unit: -at Teok Gaon besides Nahor Ali.
- Oil filling station at Dhudor Ali.
- Cycle track:One is from Bhoju Charali to Nahor Ali and the other one is from Sonari HS. School to TowkakRiver Bridge on Dhudor Ali.
- Vending Zone: In front of Bus Terminus and at Sonari College Stadium.
- Junction point: -a.Bhoju Charali b.Nahor Ali Tinali and c.Rajapukhuri Tinali.
- One Bypass is being proposed from Lachit Park via Sonari Grant Tea Garden to Dhodor Ali at ward no.16.
- One wholesale and Retail market is being proposed near the truck terminus at Naphuk Grant.

9.4. INDICATIVE SOURCES OF FUND: -

The ULB & concerned line departments will submit the DPR's to their respective departments for sanctioning fund from State & Central Government under various schemes like NLCPR, NEC,10% pool fund etc. The ULB's can also adopt the policy of Private Public Partnership (PPP) mode for raising the fund for a few remunerative projects.

CHAPTER – 10:

DISASTER PLAN

10.1. HAZARDS SPECIFIC PRONENESS IN SONARI: -

- **Earthquake: -**

As per the latest seismic zoning map of India, the Charaideodistrict falls under High-RiskZone- V, where a maximum intensity of IX can be expected.

- **Flood: -**

Even Sonari Town is also facing urban flooding in many localities due to low lying of Dhodar Ali and lack of properdrainage system.

- **Soil Erosion: -**

The soil erosion is major threat to many areas due to the high undercurrent of river Tawkak.

- **Fires: -**

The fire takes places in Sonari due to short circuit in commercial areas, thatchedhouse. Mainly fire takes place from March to April when the climate remains very dry.

- **Cyclone: -**

In Sonari cases related to low density cyclone occurred in some places.

10.2. NEED FOR DISASTER MANAGEMENT: -

Data on disaster occurrence, its effect upon people and its cost to countries, are primaryinputs to analyze the temporal and geographical trends in disaster impact. Disaster losses,provide the basis for identifying where, and to what extent, the potentially negative outcomesembedded in the concept of risk is realized. They help to understand where, and to whom,disaster risk becomes impact. They also provide the basis for risk assessment processes, adeparting point for the application of disaster reduction measures.

Development cannot be sustainable unless disaster mitigation is built into developmentprocess. Investments in mitigation are more cost effective than expenditure on relief andrehabilitation. Prevention and mitigation contribute to lasting improvement in safety and areessential to the integrated disaster management system. Disaster response alone is notsufficient as it yields only temporary results at a very high cost. So, emphasis must be onDisaster prevention,mitigation and preparedness, which help in achieving objectivity ofvulnerability reduction.

As per Section 40 of Disaster Management Act, 2005 that every department of theState Government shall prepare a Disaster Management Plan.

10.3. IMPORTANCE OF PUTTING DISASTER MANAGEMENT PLANS IN PLACE:

Disasters are events that have a huge impact on humans and/or the environment.Disasters require Government intervention. They are not always unpredictable. Floods takeplace in valleys and flood plains, droughts in areas with unstable and low rainfall, and oilspills happen in shipping lanes. This predictability provides opportunities to plan for, preventand to lessen the impact of disasters.

Disasters arise from both natural and human causes, and the responses needed couldstretch community and government capacity to the limit. Disasters are inevitable although wedo not always know when and where they will happen. But their worst effects can be partiallyor completely prevented by preparation, early warning, and swift, decisive responses.

Disaster management aims to reduce the occurrence of disasters and to reduce theimpact of those that cannot be prevented. The Government White paper and Act on DisasterManagement define the roles of Local Authorities as well as Provincial and Nationalgovernment in disaster management.

North East Region has been vulnerable to many natural and manmade disasters in thepast. We can notice that most of the disasters have occurred within the last two decades,and the frequency, intensity and magnitude of the disasters are ever increasing.

10.4. PLAN OBJECTIVES: -

The objectives of the Disaster Management Plan are:

- ❖ Disaster management in the routine affairs of the office
- ❖ To provide technical and humanitarian assistance during disaster
- ❖ Prompt and effective discharge of office responsibilities during disaster situations
- ❖ Ensuring safety of office infrastructure, human resource and other assets
- ❖ Ensuring safety of the beneficiaries and others
- ❖ Speedy restoration after disaster impact
- ❖ To conduct trainings and capacity building for effective prevention, mitigation andresponse for disasters.
- ❖ To undertake information, education and communication activities to createawareness among the communities and the general public.

10.5. LIKELY GEOGRAPHICAL EXTENT AND MAGNITUDE / SEVERITY: -

1) The Master Plan area is situated on a flat land with slight slopes. The riverTawkak which overflows and excess water enters in to the Master Plan Area and causes flood. Moreover, low lying of Dhodor Ali passing through the townand poor drainage system for unplanned development; enhance everychance of flash flood due to heavy rainfall. Such flash floods have been experiencedduring last five years.

2) Assam as a whole is within the Zone V of earthquake zone. Especially in 1950 Earthquake,Sonari haswitnessed a large devastation. So, it can be said that geographically andgeologically Sonari is situated in a very hazards prone zone.

3) Chances of Landslide are comparatively less in this district but might happen in the bank of Tawkak river. But fire can break out in thecongested residential and commercial areas, bazaars of the town anytime during leanseason. So is the risk of epidemic in the slum/basti areas. The district hasfaced cyclones several times in the past. Road accident, rail accident, collapse of multi-storeyed buildings etc. can occur at any time. Of course, riot is not so common in this district.

10.6. DISASTER MANAGEMENT CYCLE: -

In multi-hazard response plan, the disaster management cycle has a significant role toplay. The four stages of disaster cycle have their own importance in terms of their implementation during, after and before the occurrence of any disaster.

Pre-Disaster Activities

1. Policy development and National, State,district, local level disaster organizationformation
2. Vulnerability and capacity assessment
3. Prevention and mitigation
4. Preparedness, planning and training

During Emergency Activities

1. Warning (beginning before the actual event)
2. Evacuation, search and rescue
3. Emergency assistance (relief) – food, water, shelter, medical aid

Post Disaster Activities

1. Repair and restoration of life lines (power, telecommunications, water transportation)
2. Reconstruction and rehabilitation.

10.7. FORMATION OF SONARI DISASTER MANAGEMENT CELL (SDMC): -

The Master Plan recommends for formation of a Sonari DisasterManagement Cell (SDMC) in the office of the Chairman, Sonari Municipal Board, asper Section 40 of Disaster Management Act, 2005.

The SDMC has to be constituted with the functionaries like Chairperson (Chairman), Vice Chairman (Co-Chairperson), Chief Executive officer (Executive Officer), Members (SDO-Civil, Health, Roads, Building, Tea & Oilindustries and other relevantdepartment), and Nodal Officer (Jr. Engineer).

The SDMC will give emphasis towards the preparation of Sonari DisasterManagement Plan. The plan also recommends that the SDMC cell to co-ordinate duringemergency with the District

Disaster Management Authority (DDMA) located at the Head-Quarter of the District. The SDMC Cell will provide all the available resources and manpowerfor Disaster Management. This Cell will mobilize the service of technical personnel for thedamage survey work to help the District Administration.

The SDMC must meet at least once in six months i.e., in the month of March andSeptember before the Disaster Season (Flood & Cyclone) of Sonari town under thechairmanship of the Chairman/Chairperson, Sonari Town Committee & to update the plan. For this, one month's prior notice should be given to all concerned departments before convening themeeting. Chairman/Chairperson should review the work of SDMC. An emergency meeting will holdwhenever information is received regarding calamity.

10.8. STANDARD OPERATION PROCEDURE (SOP): -

The Master Plan recommends the SDMC for formulation of Standard OperationProcedure (SOP) for automatic response of the members during disaster as follows:

- ❖ Written guideline that precisely defines how operations are to be carried out.
- ❖ An organizational directive that establishes a standard course of action.
- ❖ Written guidelines that explain what is expected and required of the personnel.
- ❖ Standardization of activities: -
    - Identify planned and agreed upon roles & actions.
    - Promote coordination and communication amongst personnel.
    - Simplify decision making during potentially stressful conditions.
- ❖ Proper implementation of Assam Notified Urban Area Building Rules – 2014 (ANUABR) & Sensitization among stakeholders engaged for construction work/owners to use disaster resistant technologies.

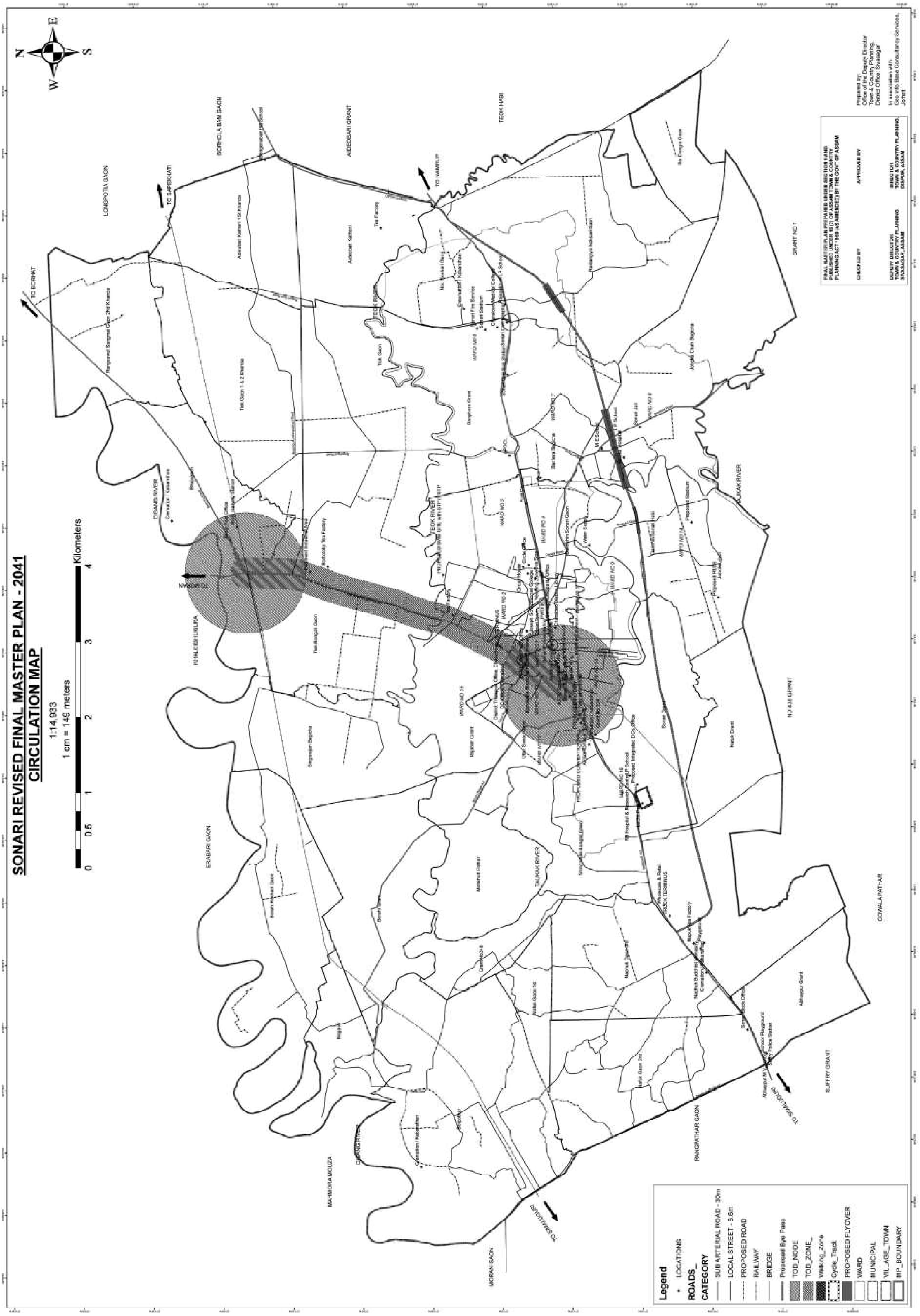
10.9. RAINWATER HARVESTING: -

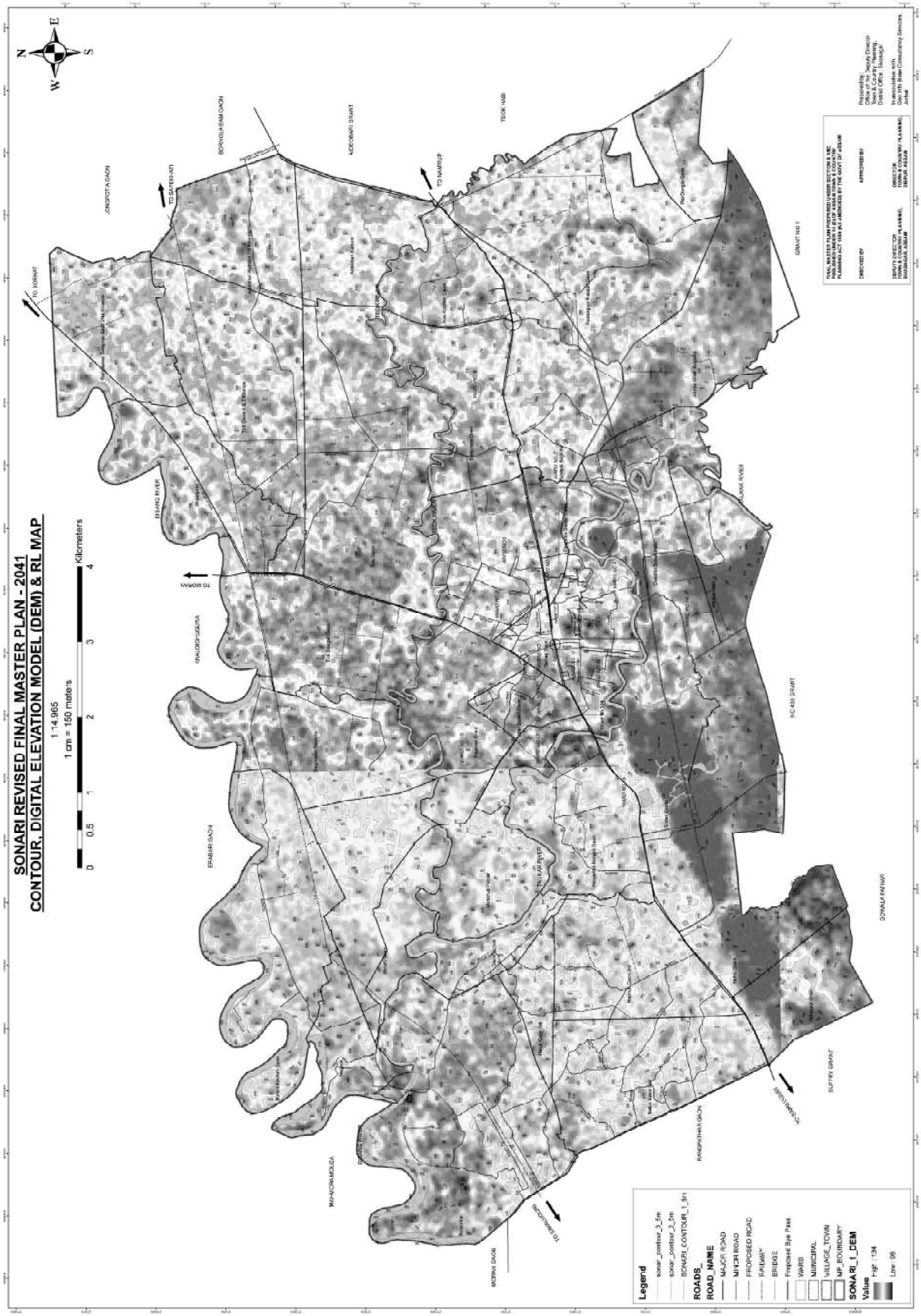
Sonari Zone has experienced heavy rainfall during summer season due to thesouth-western monsoon that leads to artificial floods not only in the plan area. So, the plan recommends adoption of rainwater harvesting system in construction activities that willreduce the volume of artificial floods in the Master Plan Area and also help to maintain theground water level.

10.10. DOs & DON'Ts DURING

a) EARTHQUAKE: -

b) FIRE: -


SONARI REVISED FINAL MASTER PLAN - 2041
CIRCULATION MAP
1:14,933
1 cm = 149 meters
Kilometers
0 0.5 1 2 3 4
Legend
LOCATIONS
ROADS_
CATEGORY
SUBARTERIAL ROAD - 30m
LOCAL STREET - 5.6m
PROPOSED ROAD
RAILWAY
BRIDGE
Proposed Eye Pass
TOD_NODE
TOD_ZONE_
Walking_Zone
Cycle_Track
PROPOSED FLYOVER
WARD
MUNICIPAL
VILAGE_TOWN
MP_BOUNDARY


SONARI REVISED FINAL MASTER PLAN - 2041
CONTOUR, DIGITAL ELEVATION MODEL (DEM) & RL MAP
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1 cm = 150 meters
Kilometers
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Legend
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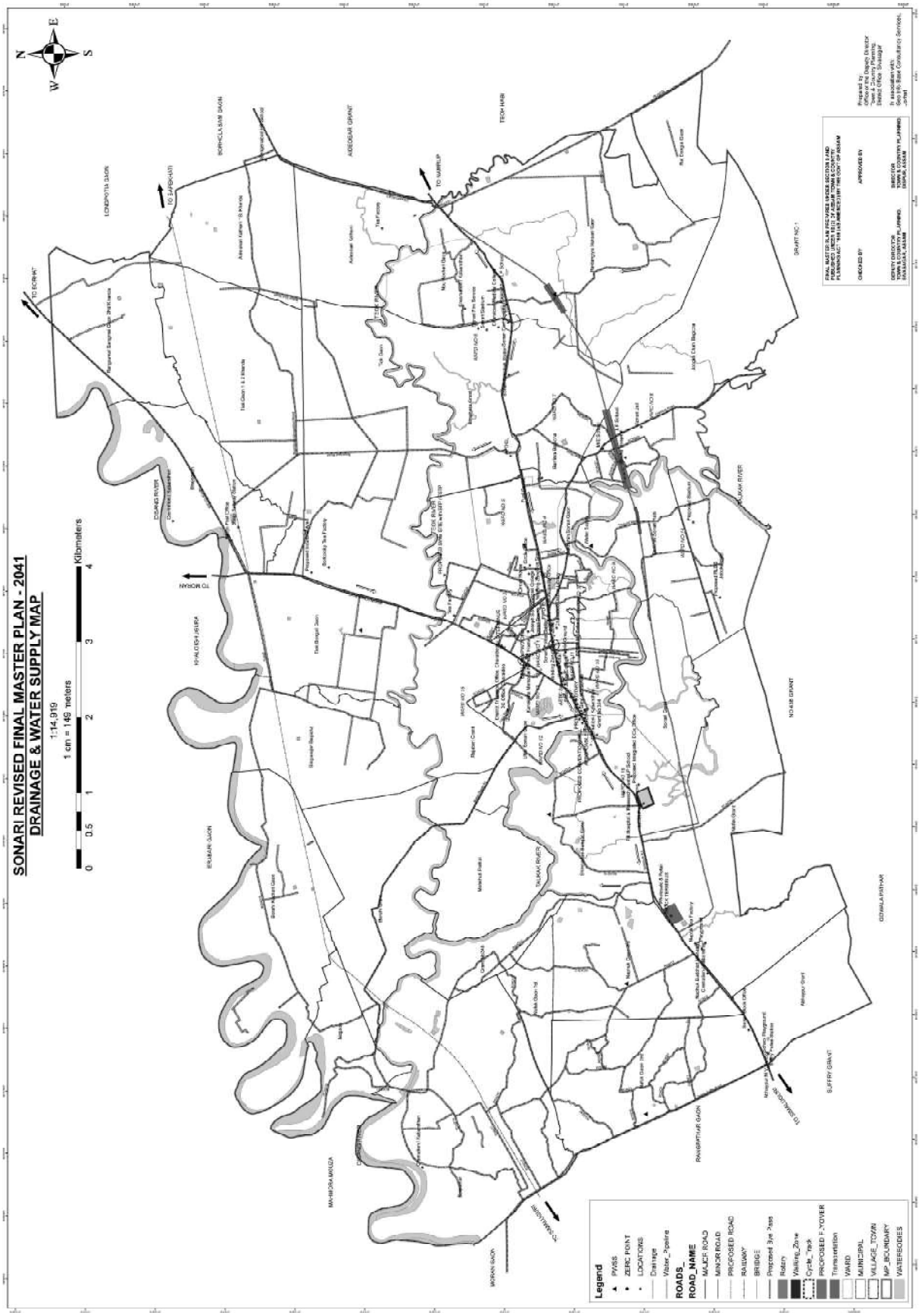
sonar_contour_2_5m
SONARI_CONTOUR_1_5m
ROADS_
ROAD_NAME
MAJOR ROAD
MINOR ROAD
PROPOSED ROAD
RAILWAY
BRIDGE
Proposed Bye Pass
WARD
MUNICIPAL
VILLAGE_TOWN
MP_BOUNDARY
SONARI_1_DEM
Value
High : 134
Low : 66
TO SONARI
TO BATEKHAT
TO NAMRUP
TO MORAN
TO DIMAPUR
TO GOLAGHAT
ONGPOTA GAON
BORHOLIBAM GAON
KOKOSAKH SHANT
TEOK HAB
DHANU RIVER
DHALOKHUDIYA
ERABARI GAON
MAHACHAMOLIGA
MORAN GAON
KANGKATHAN GAON
DONIALI PATHAR
SUFFRY GRANT
GRANT NO 1
NC 431 SHANT
DHANSIRI RIVER
DHANSIRI ROAD
Prepared by
Office of the Deputy Director
Town & Country Planning
District Office : Sivasagar
In association with
Geo Info Base Consultancy Services
Jorhat
DIRECTED BY
APPROVED BY
DEPUTY DIRECTOR
TOWN & COUNTRY PLANNING,
SIVASAGAR
DIRECTOR
TOWN & COUNTRY PLANNING,
ASSAM, GUWAHATI


SONARI REVISED FINAL MASTER PLAN - 2041
DRAINAGE & WATER SUPPLY MAP
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Kilometers
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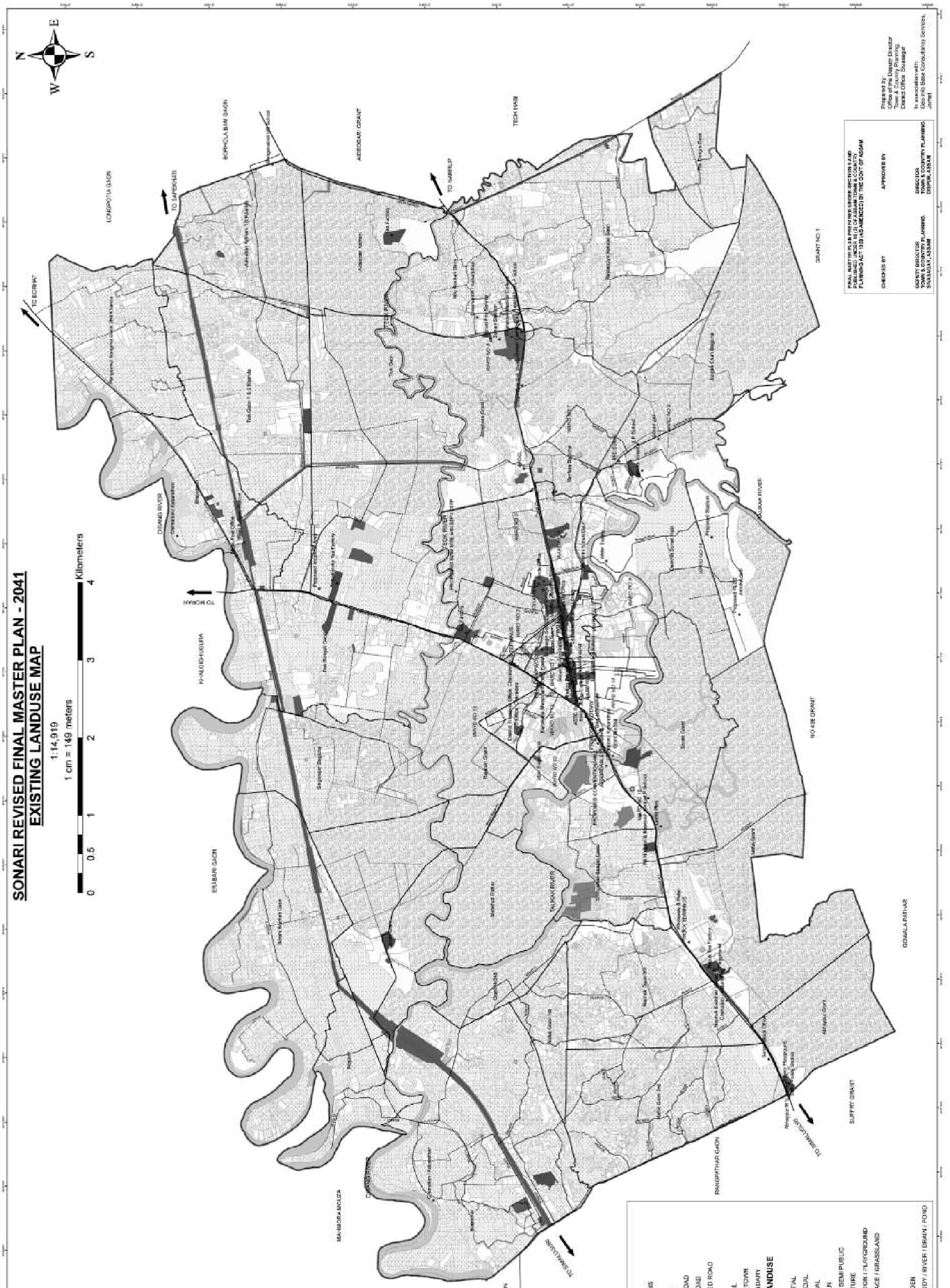
Legend
PASS
ZERO POINT
LOCATIONS
Drainage
Water_Pipeline
ROADS_
ROAD_NAME
MAJOR ROAD
MINOR ROAD
PROPOSED ROAD
RAILWAY
BRIDGE
Proposed 3yr Years
Rotary
Walking_Zone
Cycle_Track
PROPOSED FLYOVER
Transportation
WARD
MUNICIPAL
VILLAGE_TOWN
MP_BOUNDARY
WATERBODIES
TO BORHAT
TO SAPEKHATI
TO NAPHUP
TO NAMSAI
TO JAMGURIHAT
TO MORAN
DOLONG RIVER
TOKAK RIVER
NOAB GRANT
SUFFRY GRANT
DEORALA PATHAR
MAHMORA MOUZA
BOKAKHAT GAON
BORHOLA GAON
ABEDDAR GRANT
TECHI HABI
LENGPOTIA GAON
BOGIBARI GAON
KHALOSHI HABI
NAMSAI GAON
MORAN GAON
RANGAPATHAR GAON
GRANT NO 1


SONARI REVISED FINAL MASTER PLAN - 2041
EXISTING LANDUSE MAP
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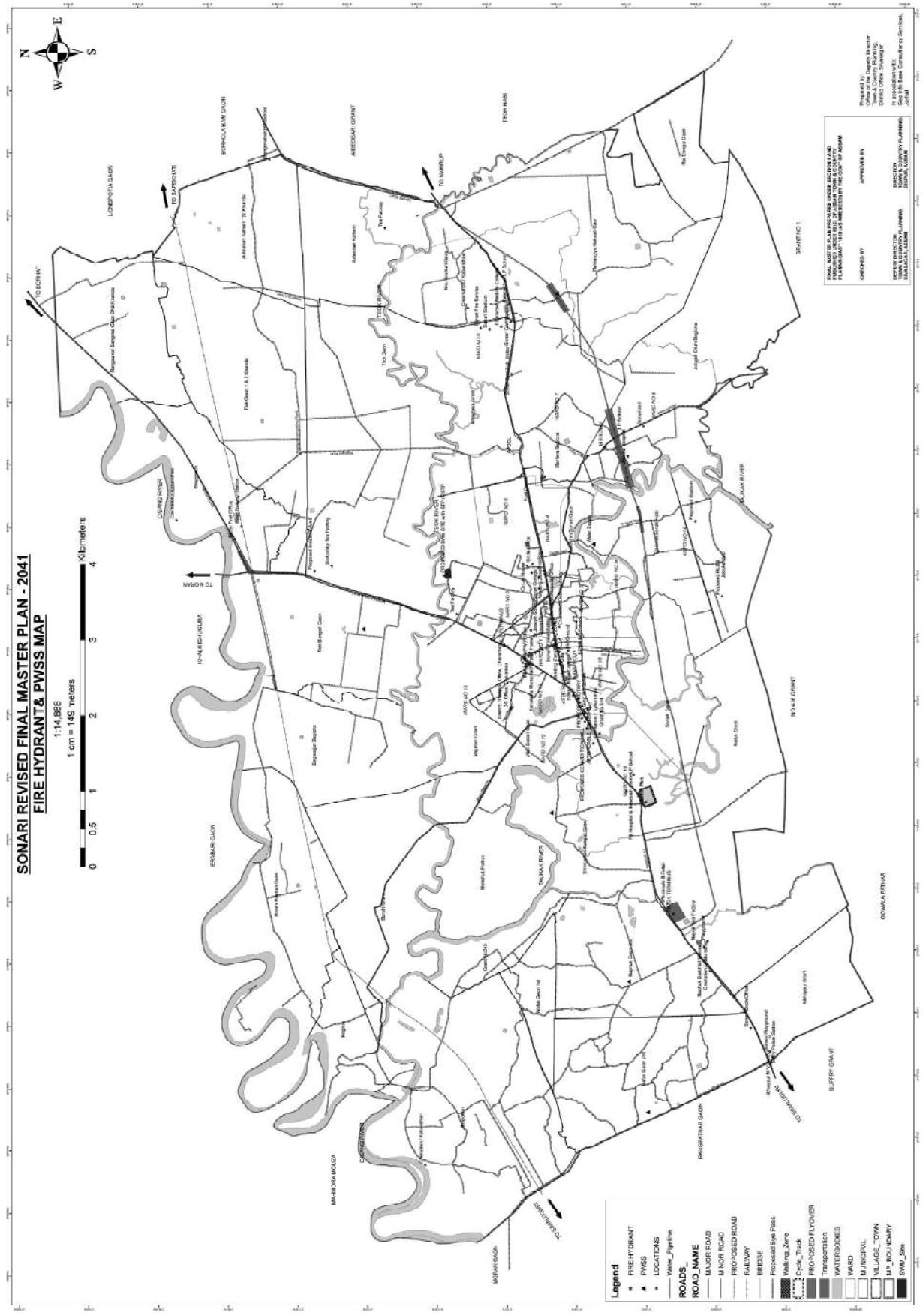
1 cm = 149 meters
0 0.5 1 2 3 4
Kilometers
Legend
LOCATIONS
ROADS_
ROAD_NAME
MAJOR ROAD
MINOR ROAD
PROPOSED ROAD
WARD
MUNICIPAL
VILLAGE_TOWN
MP_BOUNDARY
EXISTING_LANDUSE
CLASS
RESIDENTIAL
COMMERCIAL
INDUSTRIAL
BRICK KILN
PUBLIC & SEMI PUBLIC
AGRICULTURE
RECREATION / PLAYGROUND
OPEN SPACE / GRASSLAND
ROAD
RAILWAY
TEA GARDEN
WATERBODY / RIVER / DRAIN / POND
TO MORAN
TO SAPEKHATI
TO SIMALUGURI
DISANG RIVER
DIKHOW RIVER
GRANT NO 1
MORAN GAON


SONARI REVISED FINAL MASTER PLAN - 2041
FIRE HYDRANT& PWSS MAP
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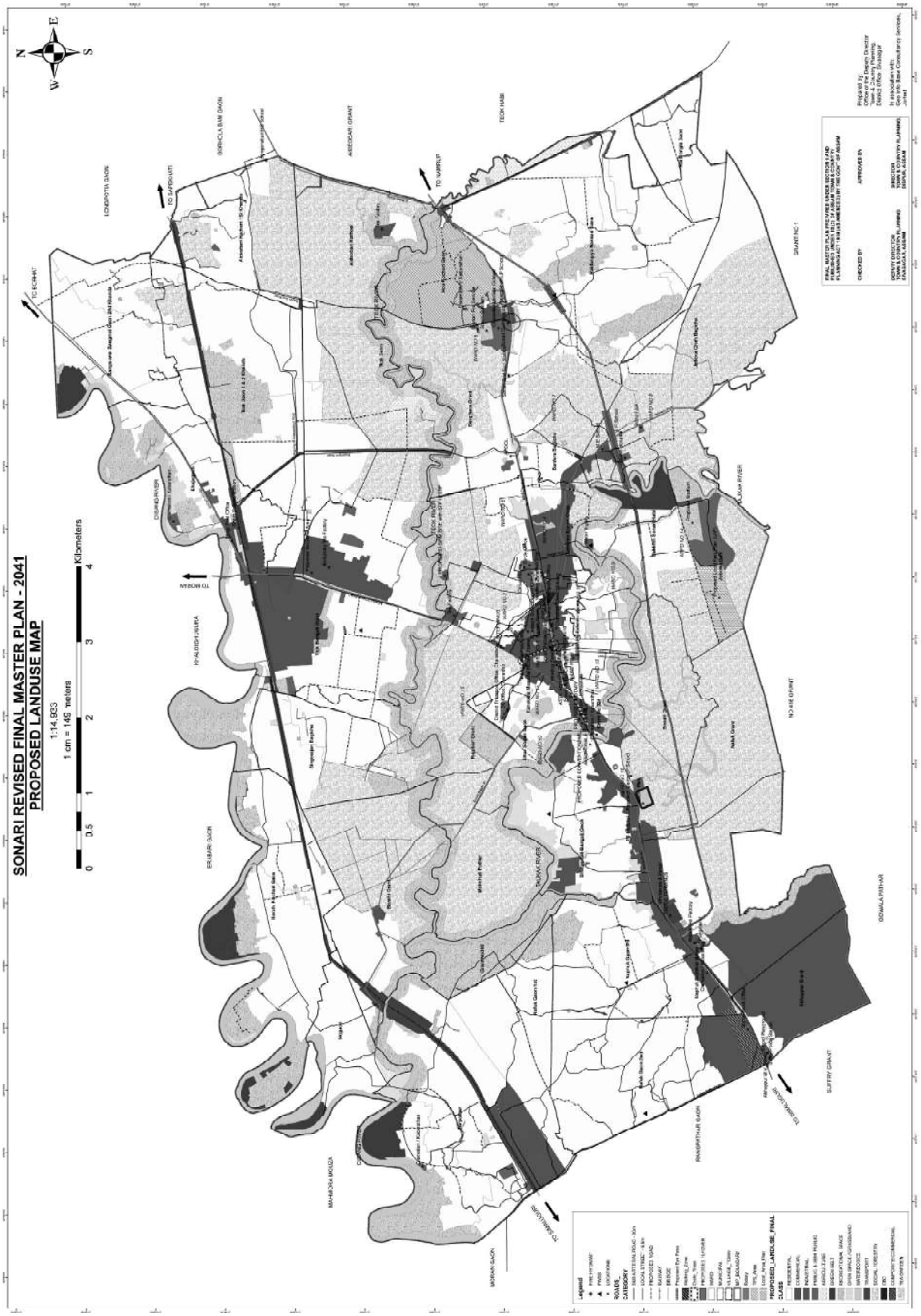
Legend
FIRE HYDRANT
PWSS
LOCATIONS
Water_Pipeline
ROADS_
ROAD_NAME
MAJOR ROAD
MINOR ROAD
PROPOSED ROAD
RAILWAY
BRIDGE
Proposed Bye Pass
Walking_Zone
Cycle_Track
PROPOSED FLYOVER
Transportation
WATERBODIES
WARD
MUNICIPAL
VILLAGE_TOWN
MP_BOUNDARY
SWM_Site
TO DERAIL
TO JAPORIGHAT
TO MORAN
TO NAHARLAGUN
TO JORHAT
TO JORHAT
LOKOPOTHA GAON
SORKOLA BAM GAON
ABEDBAR GRANT
TENGH HABI
DISANG RIVER
KHALGEHUGURI
ERABAR GAON
DHUNAI RIVER
BUFFER GRANT
GOWALA PATHAR
MAHESHKHOLA
MORAN GAON
RIVERBATHAR GAON
DEPARTMENT OF TOWN AND COUNTRY PLANNING
DIBRUGARH :: ASSAM


SONARI REVISED FINAL MASTER PLAN - 2041
PROPOSED LANDUSE MAP
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1 cm = 146 meters
Kilometers
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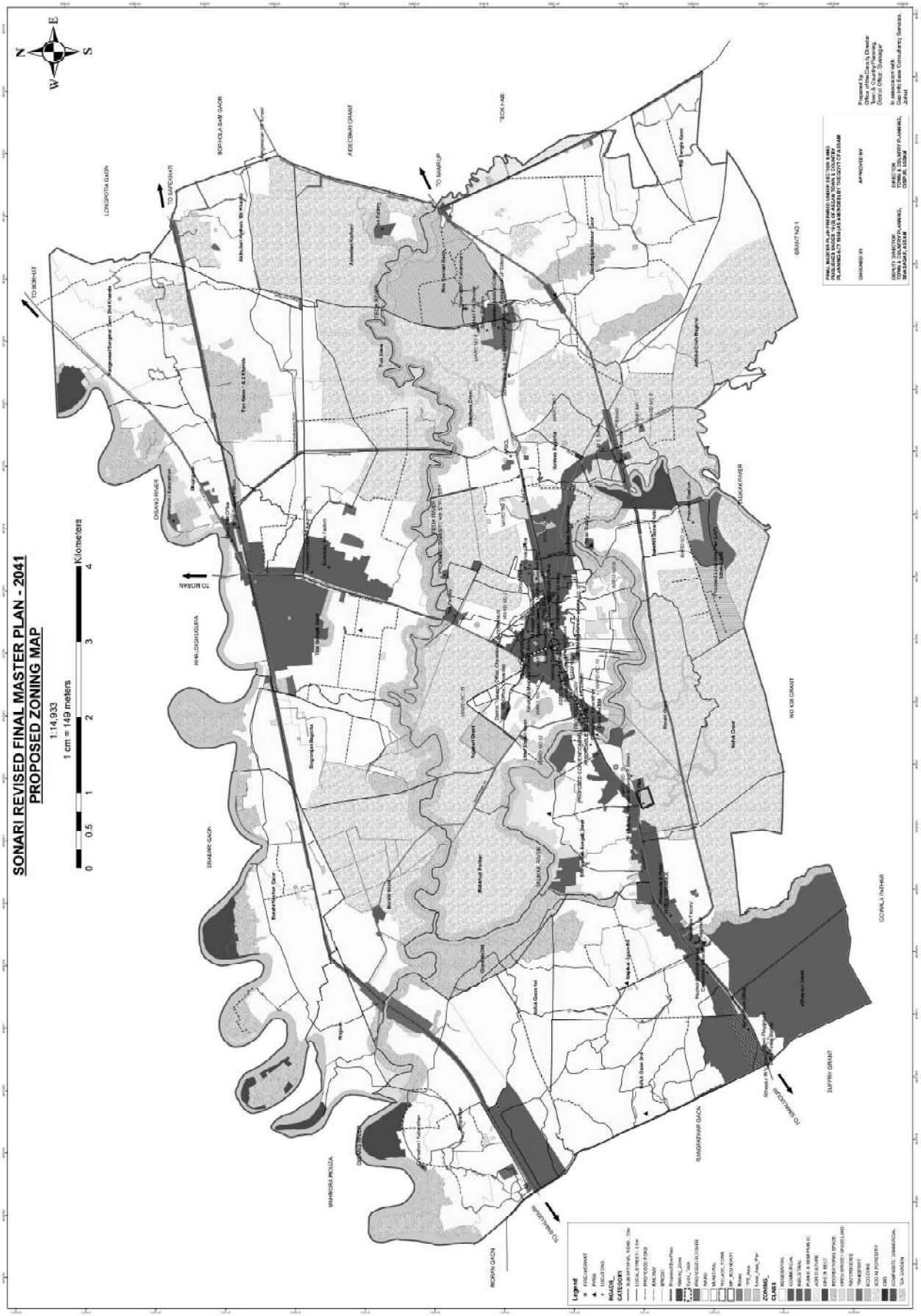
TO SAPEKHATI
TO MOSEM
TO GARMUR
TO DIMAKUCHI
TO GOHALAPATHAR
LOKEPOTIA GAON
SIRIKOLA BAM GAON
ADEEDARI GRANT
TEOK HABI
DHANSIRI RIVER
TEOK RIVER
DHANSIRI NO 1
NO KHE GRANT
ERUBARI GAON
MAHMORA MOUZA
RANGAPATHAR GAON
BUFFRY GRANT
MORAN GAON
GOHALAPATHAR
Legend
PROPOSED_LANDUSE_FINAL CLASS
ROADS_CATEGORY


SONARI REVISED FINAL MASTER PLAN - 2041
PROPOSED ZONING MAP
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1 cm = 149 meters
Kilometers
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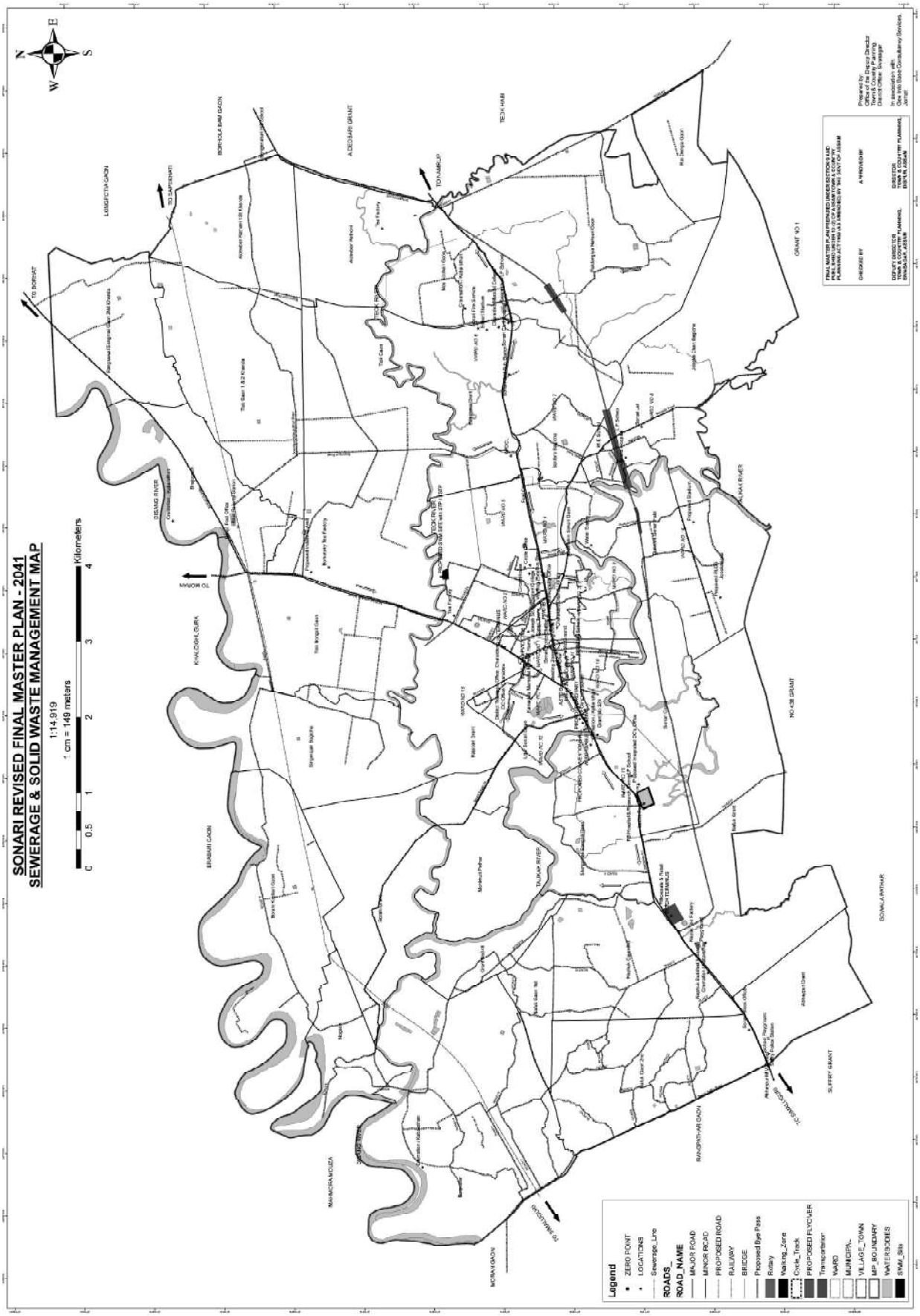
TO SARUCHAPAR
TO MARUP
TO MORAN
TO SIMALUGURI
TO SIMALUGURI
LONGPOTIA GAON
BORHOLA BAM GAON
KHERKOWAR GRANT
TEOK I AB
GRANT NO 1
DISANG RIVER
KAKADRIVER
NO 638 GRANT
BUFFER GRANT
RAMGARPAR GAON
MAHMORA PICHLA
INORIN GAON
GOVINDA PATHAR
Legend
FIRE HYDRANT
PARK
LOCATION
ROADS
CATEGORY
ZONES
CLASS
RESIDENTIAL
COMMERCIAL
INDUSTRIAL
PUBLIC & SEMI PUBLIC
PARK & RECREATIONAL
AREA IN BEAT
RECREATIONAL SPACE
OPEN SPACE/ GRASSLAND
WATERBODIES
TRANSPORT
FOOTPATH
ROAD AVENUE PLANTATION
RIVER
COMPOSITE ZONE/MIXED USE
CA GARDEN


SONARI REVISED FINAL MASTER PLAN - 2041
SEWERAGE & SOLID WASTE MANAGEMENT MAP
1:14,919
1 cm = 149 meters
Kilometers
0 0.5 1 2 3 4
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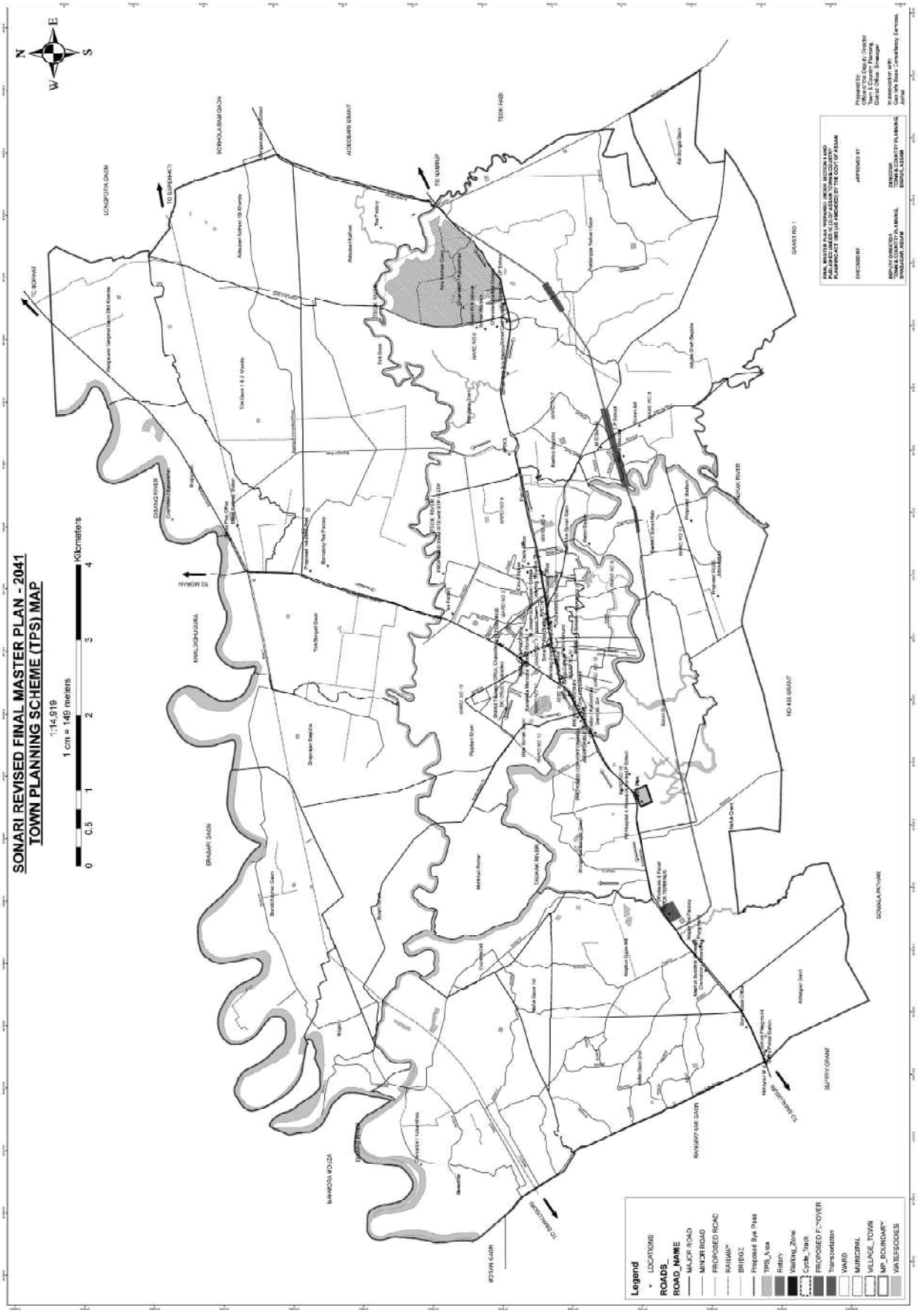
Legend
ZERO POINT
LOCATIONS
Sewerage_Line
ROADS_
ROAD_NAME
MAJOR ROAD
MINOR ROAD
PROPOSED ROAD
RAILWAY
BRIDGE
Proposed Bye Pass
Rotary
Walking_Zone
Cycle_Track
PROPOSED FLYOVER
Transportation
WARD
MUNICIPA...
VILLAGE_TOWN
MP_BOUNDARY
WATERBODIES
SWM_Site
TO BORPAT
TO SAPEKHATI
TO TAMULPUR
TO NAMRUP
TO MORAN
TO GOLAGHAT
TO BOKAKHAT
DISANG RIVER
DIKHOW RIVER
DHANSIRI RIVER
DIJUKA RIVER
KHALOGHAGURI
BORHOLA BARI GAON
LUKHOKTIA GAON
ADESHARI GRANT
TEOK HABI
GRANT NO.1
NO.4/B GRANT
SUPERI GRANT
BOWALIA PATHAR
BANDHARI GAON
MORAN GAON
MAHMORA MOUZA
ERABARI GAON



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